

American Forests *and* Forest Life



March, 1927

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ADEQUATE FOREST FIRE PROTECTION by federal, state, and other agencies, individually and in cooperation; the REFORESTATION OF DENUDED LANDS, chiefly valuable for timber production or the protection of stream-flow; more extensive PLANTING OF TREES by individuals, companies, municipalities, states and the federal government; the ELIMINATION OF WASTE in the manufacture and consumption of lumber and forest products; the advancement of SOUND REMEDIAL FOREST LEGISLATION.

The ESTABLISHMENT OF NATIONAL AND STATE FORESTS where local and national interests show them to be desirable; the CONSERVATIVE MANAGEMENT OF PUBLIC AND PRIVATE FORESTS so that they may best serve the permanent needs of our citizens; the development of COMMUNITY FORESTS.

FOREST RECREATION as a growing need in the social development of the nation; the PROTECTION OF FISH AND GAME and other forms of wild life, under sound game laws; the ESTABLISHMENT OF FEDERAL AND STATE GAME PRESERVES and public shooting grounds; STATE AND NATIONAL PARKS and monuments where needed, to protect and perpetuate forest areas and objects of outstanding value; the conservation of America's WILD FLORA and FAUNA.

The EDUCATION OF THE PUBLIC, especially school children, in respect to our forests and our forest needs; a more aggressive policy of RESEARCH AND EDUCATIONAL EXTENSION in the science of forest production, management, and utilization, by the nation, individual states, and agricultural colleges; reforms in present methods of FOREST TAXATION, to the end that timber may be fairly taxed and the growing of timber crops increased.

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APRIL AND FOREST FIRES

In April comes *AMERICAN FOREST WEEK*—and the approach of the dreaded fire season. So in our April number Uncle Sam's fire fighter Howard Flint takes you "Behind the Scenes in the Fire Game." There is a story told by a fire lookout and a program of suggestions for observing American Forest Week by Shirley Allen. Of course President Coolidge's proclamation will be there, and an Easter story of trees.

AMERICAN FORESTS



© C. O. Buckingham

CHERRY BLOSSOM TIME IN WASHINGTON

This is *One Reason* why the Capital City is the Mecca of Tourists in Spring-time---the Far-famed Cherry Blossom is the Lure. Their Delicate Grace and Beauty Relieve Delightfully the Severely Classic Lines of the Great National Shaft.

What Wild Animals Think of Captivity

BY WILLIAM T. HORNADAY

TO AN absolute certainty, we know what some of the wild animals think of captivity at the tender mercies of man. They regard it as a hazardous risk, and a possible curse and they flee from it or fight against it to the last extremity. It is just as natural for a young wild mammal to fear the touch of the human hand, and shrink from it, as it is for the wild baby to

breathe and nurse. And that fear is mighty well founded; for about nine times out of every ten, captivity means calamity.

By the same natural processes that we pursue in ascertaining the thoughts of children unable to talk, it is possible for men to learn what wild mammals think of captivity. In a first interview with a bear or a baboon



IVAN, THE HAPPY ALASKAN BROWN BEAR

Elwin R. Sanborn

He thoroughly enjoyed his captivity, flourished, and finally died in it, of old age, after twenty-two years.

you may not learn so very much; but in a dozen or twenty, thoughtfully and patiently pursued, you may learn a lot. It is a dull keeper who can not tell with a fair degree of accuracy what his most intelligent animals think about *The Life*. To the watchful eye, operating day after day, the wild-animal mind is by no means a closed book.

Of course it is the larger animals that most strongly and forcefully register their fear of man, and their abhorrence of his society and his cages. The small and weak ones can not successfully fight wood and steel, and they soon give up. Nearly all young animals are powerless to resist captivity, and they yield to it because they can not do otherwise. As they grow up they adjust their minds to their surroundings, and a few of them find that after all has been said, men are not wholly depraved.

Wild mammals of large size that are caught when adult, and in full vigor, usually fight captivity hard and long. A few give up quickly, but some never do. Animal men with kind hearts,—and no other kind should ever be permitted to become keepers,—do not like big animals that are caught when full grown. It is painful, and sometimes harrowing to keep them as unwilling or even raging prisoners. The seldom-coming visitor may for a moment enjoy witnessing the rage of such an animal, but, believe me, the keepers certainly do not.

Of all the savage and dangerous wild mammals that I ever have known, none has manifested the splendid

hatred of captivity that has been shown by Silver King, the big male polar bear that was caught in 1910 in Kane Basin, when fully adult. Not for one hour has he

accepted captivity, or ceased to hate all men,—even including his patient and faithful keepers. Never once has he done aught that indicated amiability, or the consent of the governed. He eats his food grudgingly, he refuses to take exercise, and he refuses to swim in his fine, big pool,—even when panting from the heat of midsummer. This last perversity is a sore trial to those responsible for his personal appearance before visitors.

Talk about irreconcilables! If you stand close up to his bars and talk to him a trifle too long,—from his point of view,—he will suddenly make an angry and growling rush at you, to frighten you away. Some day that bear will die as he has lived, grouching and hating man in an ideal bear den, without ever hav-



PYGMY HIPPOS THAT REVEL IN CAPTIVITY

Caught full grown, and photographed just after their arrival in New York direct from Liberia. Their actions say: "This is just the place we have been wanting to find for years! No more African jungles for us." Four young ones have been born to this pair.

ing given up, even for one hour.

But, thank goodness, all bears and bearish views of captivity are not alike. As an absolutely complete opposite to white Silver King, we enter as an exhibit the huge and wonderful jet-black bear captured by Mr. Martin-Zede in 1921, on Anticosti Island, and presented by Senator Gaston Menier to the New York Zoological Park. That splendid animal never feared man, and never hated captivity! He was caught in a comfortable shipping cage set in his forest home, and six hours after capture he accepted food from the hand of Mr. Martin-

Zede. Until the day of his premature and lamented death (from pneumonia!), he never once resented captivity and never once became angry! Beyond question, he thought that captivity with Mr. Martin-Zede and with us was by no means a hard lot, and he accepted it as if he had always expected it. Is it not queer,—this wide difference in temperament between these two bears?

I am certain that every hippopotamus in comfortable quarters, with plenty of clean water in which to bathe, is as happy and contented as his days are long. It is reasonably certain, however, that a hippo has few thoughts, and still fewer aspirations. His mental repertoire is about as follows: Warmth, sunlight, a private park in summer, plenty of daily hay, 12 loaves of bread and a bushel of vegetables; clean water in the pool, and the joy of showing the interior of his cavernous mouth to the proletariat. He does as he is bid, and never grumbles about "freedom" of doubtful value.

Most full-grown male elephants hate captivity. This is partly because the inactivity of it palls upon them, and they long for something to do. Idle confinement bores them, and just like the so-called "mischievous" apes and monkeys, they go about their quarters looking for something to do. Usually this leads to the discovery of structural weaknesses in buildings, fences or gates, and then

they joyously set to work to break something. This is not to be set down as due to hatred of captivity, but rather to a legitimate desire for interesting work. What a pity there are no cross-word puzzles for elephants, and other wild animals to solve. When a captive elephant can pull a wagon, or push freight cars on a switch, he is perfectly happy.

There is no other thing that produces instant hatred of captivity in wild animals equal to cruelly close confinement. While it is all right to punish criminals by means of the cell, and silence and boredom, it is entirely wrong to inflict that, or any other kind of punishment, on a perfectly good and morally upright wild animal. Why punish innocence?

If the zoological park builders of today and tomorrow desire to keep only wild animals that are happy, contented, and pleasing to look upon, then tell them (1) to provide abundant room, and (2) to keep no animals that are not comfortable and measurably happy. I have ascertained by inquiry among the corrals and ranges of the hoofed and horned animals that to them hell means a pen 50 x 50 feet for one animal and heaven is a shady park of three acres for 8 animals.

Every designer of a new zoological park assumes a line of grave responsibilities. To the prospective wild animal captives, bad judgment and failures spell misery



THE AMBITIOUS YOUNG INDIAN ELEPHANT

When first acquired, "Alice" was so enamored of her freedom in security that she undertook to "run" the Zoological Park. So she was gently spread out upon the ground, to think it over.



A DISCRIMINATING CAPTIVE

The famous gorilla, "John," who loved captivity with Major Rupert Penny and Miss Cunningham, his owners, but hated it everywhere else. This wonderful animal was the first to reveal the true capacity of the gorilla mind.

and death. And yet, many a new zoo starts out with a personnel cheerfully destitute of precise zoological knowledge, and sometimes lacking even the basic facts of wild-animal requirements. At this time the building of an ape house, an elephant house or an antelope house without a good outfit of spacious outdoor cages and corrals should be made a penal offense. There is no excuse for such wicked proceedings. All such animals should be kept right, or not kept at all.

Once I was shown by a wild-animal expert a new ape and monkey house, which contained many good features, but one great error. Feeling impelled by the demands of hospitality to say something agreeable, I praised up the good features. And then my conductor gravely remarked.

"Yes. This is a fine building,—but for one thing. The apes and monkeys can't live in it!"

Once upon a time I interviewed an orang-utan that I found on exhibition in solitary confinement in a barn-like room as dark as a coal-cellar. I had seen Mike before, in better circumstances.

"Well, Mike," I said, "How are you getting on now?"

"Rotten!" said he, gloomily. "You see, it is so dark and so gloomy here that you scarce can see me. And I came from Borneo, too,—the Garden of the Sun!"

"It is tough, old chap. But who is to blame?"

"Somebody is onery. That's all I know. And they don't even give me a companion. I don't believe I can stick it out much longer."

"What do you mean? Life?" I demanded, horrified.

"Yes, I mean life. To me, life is a burden, and a thousand times over I have wished myself dead."

"I'll see if I can't get you out of this, by purchase or exchange."

"You can't," said Mike, sadly. "I'm a deposit; from



THE TREE-CLIMBING HIMALAYAN WILD GOAT

The tapiirs say that captivity is all right if they can have enough big oak trees to climb for amusement. This picture is a bid for the interest of all foresters.

a kind hearted party who put me here, and then went off somewhere to have a good time. He handed me a lemon all right. I'll have to stick here until I die."

Now, the truth is that everything Mike said and thought was true, and to the last degree it was shameful.

The bears of the world are, in their joys and sorrow, almost as easy to read as a modern novel,—though not necessarily at a first interview. Give a bear plenty of sunlit space, a level floor, a good pool of water, rocks to climb upon and a good den, and—if he is not a sloth bear or a Japanese bear,—he will be quite as happy as any wild brother—possibly more so. In a dozen different ways he will show his contentment.

Put those same appreciative bears in small and mean dens, on an uneven floor, without good bathing pools, with high walls of stone on three sides and not half enough sunlight, and presto, you will have miserable and unhappy animals, that are not a good

risk for life insurance. Ask any bear so kept how he feels about captivity, and he will tell you that he hates it. And how could he possibly feel otherwise? A bear does not like to live in a damp and sloppy den 10 feet square, any more than a man likes to live in a wash-house. Why should civilized man punish honest and upright bears by compelling them to drag out even two or three years of life in hopeless and unbroken misery? Make your wild animals comfortable, and they will be happy. When for any reason you can not do that, don't take them on.

After all else has been said, there is no better index of wild-animal contentment in captivity than the breeding and rearing of wild-animal children. It is indeed true

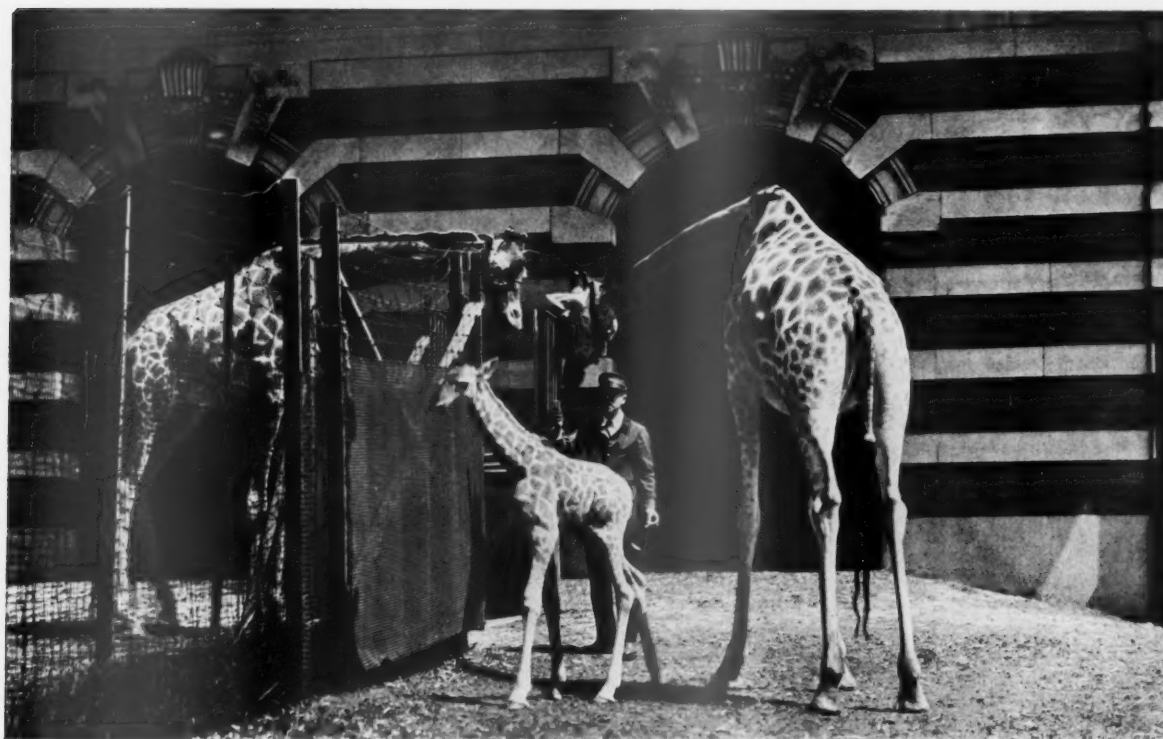
that excited and nervous captives may, and occasionally do, breed in close confinement; but they rarely rear their young. Among animal curators and keepers the rearing achievement is regarded as absolute proof of content-



Elwin R. Sunborn

AN EXHIBIT OF ZEBRA CONTENTMENT
IN CAPTIVITY

Where is the "bathing beauty" that can compare for real beauty with this wonderfully striped young zebra colt in the New York Zoological Park?



Elwin R. Sunborn

PROUD AND HAPPY PARENTS

This is the occasion of the first public appearance of the Nubian giraffe baby in the New York Zoo. And there are no hungry lions "sticking around" waiting for it, either.

ment and happiness.

As exhibits in this class, the following permanent residents of the New York Zoological Park point with pride to their young. The bison, and 7 species of deer; The Altai and American wapiti, the aoudad, tahr, mouflon, mountain goat, Beatrix antelope, eland, anoa, giraffe, pygmy hippo, tapir, the Grant and Mountain zebra, Prejevalsky horse, several kangaroo species, lion, leopard, and grizzly bear, brown bear and baboon. The chimpanzee and musk ox have borne young, but thus far have failed to rear them.

A good story of the wild animal's viewpoint of captivity came not long ago from Lamar Valley, in the northern zone of Yellowstone Park. Situated in the midships section of that valley stands a battery of strong, pine-log corrals for the Park herd of American bison, nominally representing "durance vile."

For that abounding national bison herd, of about seven hundred head, there are two seasons. Its open season begins in June, when the mountain flowers find that their open season has come, and they jump up quickly to enjoy it. The bison's close season comes in the fall, when the snows fall so deeply that the pampered children of luxury shy at trying to paw through it for a living.

During the early days of one of the latter periods, while the bison hundreds were in *defacto* captivity, and presumably pining for their freedom, some bright genius gave an order that a great lot of mature bison bulls who were no longer needed on the job, should be turned loose and given leave to go. Surely they would willingly cast in their lot with the sure-enough wild herd of a hundred or so that freely roamed the adjacent timbered mountains, and belonged to nobody save Uncle Sam.

A strong and representative delegation of bulls was duly cut out, driven out of the corrals, and told to go in peace. They marched up the grassy slope of Specimen Ridge, and soon disappeared in the green timber. And "good riddance!" said Warden McComb.

The next morning that same delegation was found assembled at the corral gates, politely asking to be re-elected to membership in the "captive" herd. Warden McComb told them the Regular Thing,—there is no vacancy at present, but if you will leave your name and address that is the last you will ever hear of it. Very sorry; but it's the green timber and freedom for you.

The delegation of discards was again headed for the timbered summits, and shooed away to remain free and independent.

The next morning,—there they were again, at the gate,—firmly objecting to freedom, and insisting upon

their right to those corrals and captivity. They said that in the face of a Wyoming winter, freedom to rustle for a living was not what it was cracked up to be, and they were right,—as wild animals usually are.

Often there is a pathetic side to the desire of hunted and harassed wild animals for the protection of humane men. The nature books are well garnished with stories of potentially savage bears, wolves, coyotes, lions and leopards that have grown up in frontier ranches or camps, and developed no desire to bark or bite. And, believe me, the sensible wild animal does not go about with a chip on its shoulder, looking for unnecessary trouble. It loves peace and a free meal ticket, and under normal circumstances it is quite willing to keep the peace.

Whenever and wherever we see good wild animals in the hands of mean and cruel men, suffering from mad-deningly cramped prison-boxes, kept grilling in the heat and glare of the sun, half frozen from bitter cold, or drenched with cold rain, we need not ask them what they think of captivity. One and all they will tell you that such captivity as theirs is hell. They appeal to you to go up to the headquarters tent, make a big fuss about it, and demand reforms.

In this liberty-ridden world, fools and mean men enjoy entirely too much freedom. As the world's laws stand today, there is no man or woman so mean and cruel that they may not have, and keep indefinitely, as many helpless animals and birds and reptiles as they fancy, and can pay for. There is no limit to the suffering that the mentally and morally unfit can inflict on animals, both wild and tame,—until the cruelty has been committed, and can be proven up to the hilt in a court of law!

This is entirely wrong. For example, the laws of all nations should rigidly prevent, as the state law of Connecticut now actually does prevent, the use and circulation of organ-grinder monkeys. The cruelty involved in this line of industrial (!) activity is apparent to every observing person. Why stand by and see it continue? Up, ye Sovereign States, and follow the good and sufficient example of progressive Connecticut. There, the trick was turned by the legislature in one time and two motions.

In captivity for wild animals, there is the same range of variation that there is between heaven and hell. Is man's responsibility to weak and helpless animals any different, save in degree, from his responsibilities to helpless human children, or elderly people?

Noblesse oblige! Some of the so-called "lower animals" are not so all-fired much lower than some men. Lowness is as lowness does; and that's that.



Good Garden Craft

A Tip or Two For the Spring Gardener—What To Do and How To Do It!

By ARTHUR HAWTHORNE CARHART



WHEN those leafless sere bundles of plants which come from the nurseries are delivered at your door in the spring, you take upon yourself an obligation to look out for their welfare. Just as a person takes an obligation to protect and properly care for a horse or dog when purchased, so does the lover of plants assume an obligation when the ownership of nursery stock is transferred.

Some plants find good homes. They fall into the loving hands of folks who know how to take care of them. But others fall in the hands of people who with all good intentions are not learned in some of the little tricks of a gardener which help plants to establish themselves and become thriving neighbors in the shrub borders.

Perhaps just a few suggestions given through the medium of AMERICAN FORESTS AND FOREST LIFE will save some trees, shrubs, flowers and vines, and smooth the way for others. For while probably every reader of this magazine loves all things outdoors there may be here a few suggestions worth while that have been hitherto unheeded.

When the nursery stock comes to you look at the tops. If they seem wrinkled and dry or even just dry, it may be good medicine to bury the shrubs in moist earth for

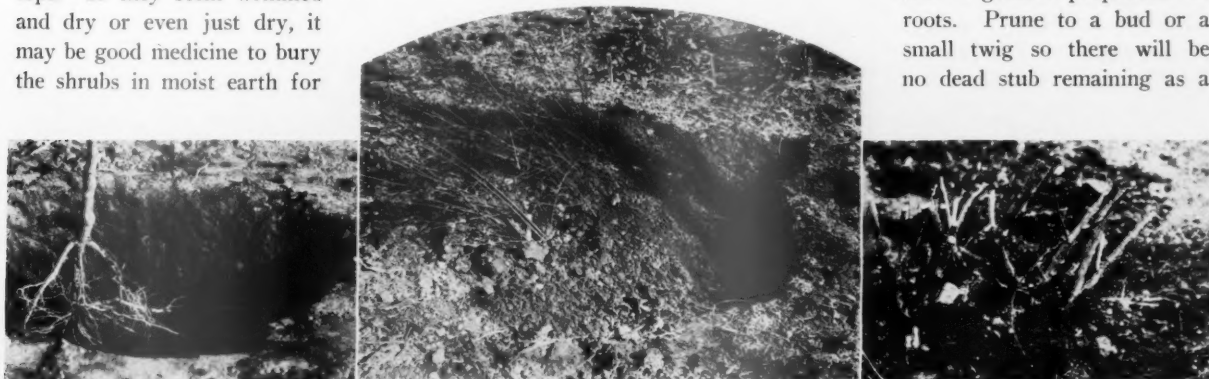
a day or so before planting. Sometimes the tops of stored plants become dry through lack of sprinkling. And if they are dry there may be just enough life left in the cambium layer and buds to "make the grade" provided they are protected by burying for a few days until the twigs absorb moisture.

If a shrub with the tops dried is planted before it has a chance to establish its root system, the winds of spring start sucking out what little moisture is left in the tops and may kill them. But by the treatment suggested they will be filled with absorbed moisture and made quite robust.

This brings up another suggestion. When watering your newly planted trees and shrubs do not put all of the water on the roots. Spray the tops also. The roots for quite a few days after planting are not able to pump up the required moisture. In semi-arid sections this one bit of garden craft has kept life in many shrubs through the critical first days of planted life in their new locations.

Of course, there should be some pruning of branch and twig when trees and shrubs are planted. This is to balance the loss in the root system which usually results from digging. Often as much as a third to a half of the twig surface should be trimmed out, but no blanket rule can be given. Prune to balance the loss in root system. Older trees require more pruning because they

lose a greater proportion of roots. Prune to a bud or a small twig so there will be no dead stub remaining as a



GIVING THE PLANTS A FAIR START

Plenty of space to accommodate the root system without crowding is essential and is provided here where a hole of proper proportions has been made ready for the plant. The center insert shows how to "heel in" plants in a shallow trench to prevent drying out of the roots before and during planting, and to the right is shown a newly planted shrub, properly pruned for healthy growth.

menace to the tree's health. And prune also to shape up the shrub or tree to the form desired.

I have seen men who "root pruned" new shrubs. This is not good practice except when preparing the shrub for later transplanting or when this pruning is done to remove mashed or broken roots. Save all healthy roots when you transplant.

When a plant of any type or size is put in the ground it is being placed in a permanent home. The soil it goes into is usually its abiding place for the rest of its life of usefulness. Too little attention is given to the soil in which plants are placed.

It was early this year, when planting some large shrubs in a border to give that border height and thickness that workmen uncovered a whole mine of building junk. There was a part of some derelict machinery, a peck or so of bricks, plaster and a few handfuls of undisintegrated lime and a chunk of concrete as big as a traveling bag. In that very location a Japanese barberry was putting forth heroic efforts to live luxuriantly and fulfill the ideas and hopes of the designer and owner of that home. But what chance has even a hardy barberry in such soil?

So do not plant your shrubs in building junk. It is not good soil for them to grow in.

Some shrubs do best in heavy clay. Others enjoy open sandy soil of loamy texture. It is rather too much to require the average small home owner to specialize the soil for the accommodation of each particular group of plants. All that should be done is to get the soil in about the same condition that you would select for ordinary vegetable garden soil. Then choose hardy shrubs that will adapt themselves to these conditions even if not their ideal soil habitat.

It sounds rather extravagant to suggest that the soil of a shrub bed be dug up and thrown out so that well rotted manure may be spread into the bottom of the bed. It adds considerably to the cost. But if this is done and the fertilizer is worked into the soil as it is put back in the bed the plants placed in this fertilized soil will "rise up and call you blessed." It might even be economy to follow this practice and use slightly smaller plants for they will spring up like weeds when given such kindly treatment.

This suggestion is particularly good for hedges of privet. Dig out the trench a couple feet deep and fill in four or five inches of thoroughly rotted manure. That hedge will grow thick and green and so rapidly that you will have to keep the clippers hot. But it will give you a good hedge in a hurry.

When planting shrubs dig the holes of adequate size. Twisting the roots into a hole half large enough bends the roots and cramps the very tubes which are supposed to suck up water for the plant. It is simply good health

insurance to give the plant adequate spread for roots when it is set out. It will grow with cramped roots but not so well.

And while you are digging those holes do not expose the roots to the hot spring sun and drying winds. Air is no more the natural surrounding of plant roots than it is of fish. Neither will do well in hot, dry air.

One of the most successful ways of handling nursery stock between the time of its arrival and planting is to dig a shallow trench and put the roots in. Then fill in enough earth around the roots to fully cover them. Wet this and sprinkle the tops regularly up to the time of planting. As the shrubs are needed move them from this temporary nursery row to their permanent beds. Thus only a few need be out of the ground at one time and a minimum of injury will result. This process is called "heeling in," and it is pictured on the preceding page.

More good life insurance is to have several pieces of burlap handy and after moistening wrap them around the exposed roots when the actual planting operation is on. The real feeder roots of a plant are so small it takes some magnification before the eye can see them. They are so delicate that one hot breath of wind will cook them. Give

them all possible protection and your plants will show the difference in the rapidity with which they will start growing in their new homes.

Trees especially should have adequate holes dug for them when planted. Then when they are set if you want to give them the best chance possible, guy them with wires so the wind will not rock them and tear loose the little new roots which are reaching out through the soil below in an effort to become established.

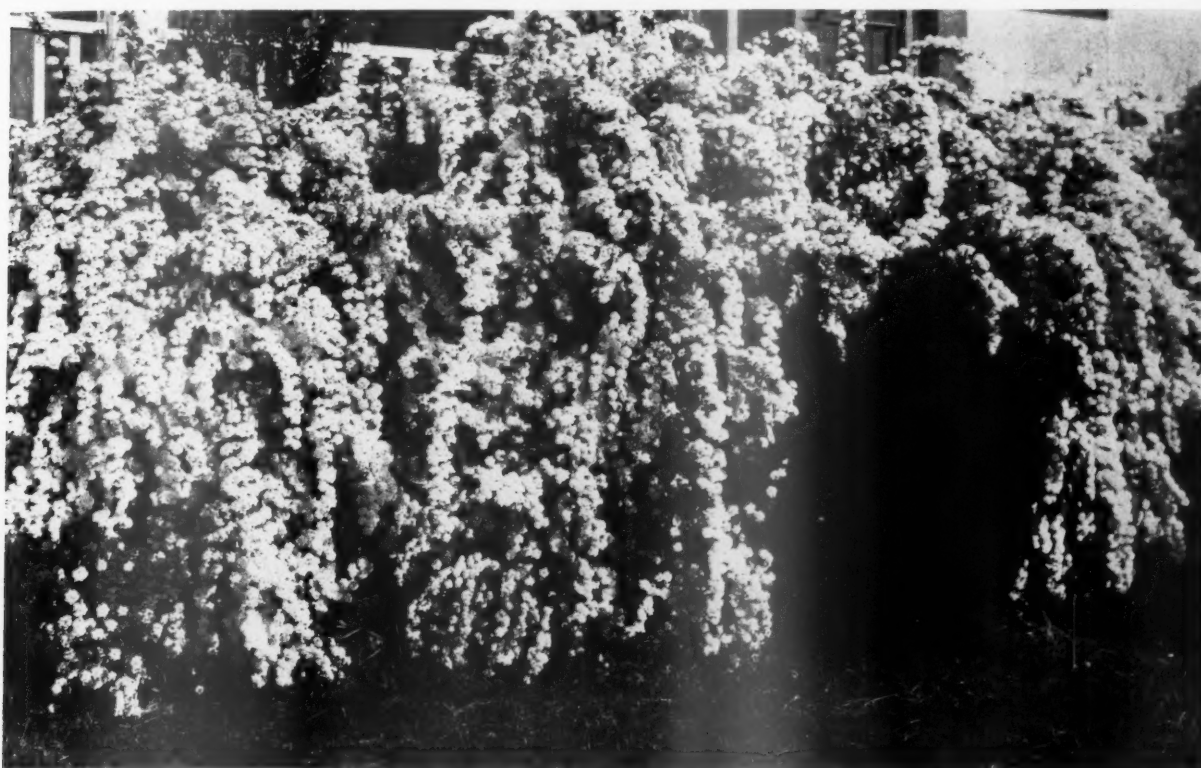
Perennials are even more tender than trees, shrubs and vines. And they will respond wonderfully to good treatment. Care with them also starts not after they are planted but when they are received. If they seem wilted get their roots in the ground in some shaded spot. Back of the garage in the vegetable garden where it is shady is a good place. Let them stay here a few days, giving them water. Or if you prefer plant them in their permanent positions as soon as possible, water them in and shade them. Shades can be made of matting on sticks, shingles stuck on the sunny side of the individual plants, or of lattice work of laths. With their fleshy green leaves perennials will start to draw water from their roots even quicker than will shrubs and any means of giving them a chance to become established is good garden craft.

The first few weeks are the hardest. Water the tops and the roots of newly planted things. Do not leave it to J. Pluvius. He is not consistent in his attentions. Where we build gardens and parks in the arid sections of the west, watering of newly planted materials is done

TWIN MAPLE LEAVES

Together they pierced their way through the mold,
Together the twain began to unfold,
Together they grew till their race was run:
Then they fell apart, for their work was done.
And a wonderful work, we must agree,
For they had started a maple tree!

—Almeda M. Castello.



THE GEM OF THE SPIREAS

Beautiful, graceful, billowing bloom. This is what is possible to attain with good garden craft after only five years from the time of planting. The spirea Van Houttei is a general favorite and is quite often used as a hedge plant.



A GARDEN GROUPING OF WILDLINGS

With the aid of good garden craft, the wild things from the woods can be made perfectly at home. Here we have a beautiful border planting of mountain laurel, against a background of red cedar, choke cherry and scrub pine.

every day until they are thoroughly established. Even where the precipitation runs to forty or fifty inches a year, there is no small value in seeing that new plant materials on your grounds and in your garden get their daily drink.

Watering, pulverizing the soil to a good seed bed, guying newly planted trees, shading newly planted perennials and every other suggestion in this article is more or less "old stuff." But it is good advice just the same. It cannot be told too often. Too many people stick their plants in the ground and then expect the plants to do the rest. But plants cannot "rustle" for themselves like a dog or a cat; they cannot howl or mew when hungry or thirsty. Yet they are living things requiring certain living conditions to do their best for their owners. Any neglect of plants, especially just after they have been planted, will limit their usefulness and beauty.

If you cannot figure it out any other way, think what you would like if you were a plant. Find out the normal plant habitats. Then match these in your borders and yards. Reason out what factors will give the best growing conditions for trees, shrubs, vines or perennials, and then give your plants care as you would any animate living thing.

And although plants cannot bark or wag their tails, they will show their appreciation of good care in a quiet way by growing prodigiously and blooming profusely. All things considered that is a pretty effective method of offering thanks to their benefactors. Most of all give them a good healthy start when they are planted. Probably more plants are killed by lack of attention to conditions at time of planting than all other stages of their normal life combined. It is a time for human friends to give all aid possible to their plant friends.



The Pipes of Pan

When the green comes back to the brown hillside,
And the sap runs again in the trees,
The meadowlarks call from the pasture lot,
And you hear the hum of the bees,
Then my daily task is toil indeed,
And I long for the woods once more;
For the wind in the trees has a crooning sound,
It's the call of the out-of-door.



Then I shoulder my pack, and I take my staff,
And I answer the wildwoods call;
To follow the trail on the mountain side,
Where the pines grow straight and tall.
And I catch the scent of the leafy mold,
And the lilt of the pipes of Pan;
And the tang in the air is the wine of life,
Far off from the marts of man.

—W. E. Hutchinson.

The Army of Silent Tree-Killers

II. Little Insects That Kill Big Trees

By W. J. CHAMBERLIN, *Forest Entomologist*

INSECTS which kill trees and destroy forest products may be divided into numerous groups according to the way in which they accomplish their work.

There is no part of the tree immune from insect attack. The potential tree, as represented by the seed, is subject to destruction by cone beetles, certain moths and tiny chalcid wasps. The seedling may be stripped of its leaves by defoliators, girdled by bark beetles, or grubs living beneath the soil may

destroy the root system. The sapling, the pole and the mature giant of the forest have enemies of root, bark, foliage, limbs and leaves. Serious damage to any one of these parts may either kill the trees outright or so weaken them that they become an easy prey for other insects.

Another class of insects which often inflict heavy damage are the wood borers which work in the sound wood of standing or fallen trees or in logs. Even rough lumber, poles, posts, ties

and like materials are subject to attack and the end is not yet for certain beetles work in finished products such as furniture, cooperage, implement handles and even the woodwork within our homes.

To treat of any number of these insects would require far more space than is available but a general account of the way in which some of the groups work may be of interest.

Undoubtedly the greatest loss to our forests results directly from a group of beetles popularly known as the bark or engraver beetles, which belong to the family *Scolytidae*.

More than four hundred distinct species of bark beetles are known in the United States, and there is hardly a single species of tree, either conifer or hardwood, which is not susceptible to the attack of at least one of these beetles. Some of the rarer trees, such as Bristlecone fir and Torrey pine have only one or two known species which attack them, while White spruce (*Picea canadensis*) is the host of



Upper—A long-horned wood-boring beetle — *Prionus Californicus* — a member of a large family very destructive to forest trees, much enlarged.

Lower—The larva of the beetle shown above, a round-headed wood-borer which mines in the cambium or tunnels in the solid wood of trees and logs.



Upper—An adult bark-beetle, greatly enlarged. More than 400 distinct species of bark beetles are known in the United States.

Lower—Adult Western cedar tree heartwood borer. The larvae of this species excavate tunnels often exceeding thirty feet in length in the heartwood of living cedar trees.



A CROSS SECTION OF AN OAK LOG SHOWING THE MINES MADE BY ROUND-HEADED WOOD-BORERS

forty-two different species and White and Yellow pine each support forty-one distinct forms.

These insects are all of small size, ranging from one-twentieth to three-eighths of an inch in length. They are all borers in plant tissue and those working in forest trees confine their activities for the most part to the outer portion of sap wood and the inner portion of the bark known as the cambium layer. Some species, however, mine only the twigs of large trees or work in small seedlings, others excavate their mines in the cones of trees, destroying the seed crop. Still others work in the roots.

The life cycle of each insect is represented by four stages, the egg, the larva or grub, the pupa or resting stage, and the adult or beetle stage.

When the beetles emerge in spring from under the bark, they mate and select a host tree in which their progeny are to feed. They usually work in pairs and, being of a gregarious nature, they congregate on selected trees into which each pair excavates its own tunnel. These tunnels penetrate the bark to the cambium of the tree and then following a particular design, which is constant for the species, a tunnel is excavated through the cambium and along the sides of this primary tunnel the female deposits her eggs in tiny niches. In time the parent beetles die, the eggs hatch into small, white worms which dig their own tunnels to secure food. These tunnels are the so-called larval galleries. Having fed the allotted time for the species, the full grown larva excavates a cell in which it rests and gradually undergoes a metamorphosis, transforming into a pupa which has much the appearance of the adult but lacks the color. A little later this pupa takes on color, becomes hard and changes to the fully developed beetle which eats its way out through the bark to meet with others of its kind, and starts the life cycle over again.

So far as the tree is concerned the result of an attack by these beetles is that the galleries of the parents and the young running through the cambium cut off the sap flow and death follows just as surely as if the tree were girdled with an ax.

We find that certain species of beetles attack only a single species of tree, such as the western pine bark beetle which lives only in western yellow pine. Other beetles attack several species of closely related trees. For instance, the mountain pine bark beetle is able to raise its brood in almost any species of pine, but seems to prefer lodge pole, Western white and Western yellow pine, in the order named. The red turpentine beetle always attacks the base or stump of a tree and has some twenty hosts. Some species confine their work to the tops of the trees and as a result of this work we find many crown-killed trees, often referred to as stag tops.

In addition to the bark beetles there are representatives of other families which attack forest trees in a similar manner and bring about the same result. The well known white pine weevil, for instance, digs pits in the bark and deposits eggs therein. The larva or grubs mine the cambium and kill the tops of young trees. This weevil has some thirty cousins which work in various trees, mostly conifers. Many of the flat-headed borers, so-called because the larva is much enlarged and flattened at the anterior end, hatch from eggs deposited by the parent beetle in the



THESE ARE DOUGLAS FIR WEB-WORMS, AND THE PICTURE ILLUSTRATES THE TYPE OF DAMAGE DONE BY LEAF-EATERS OR DEFOLIATORS

crevices of the bark and work from one to several years in the bark and cambium, ultimately killing a portion of the tree or so weakening it that it is an easy prey for other insects.

One species, known as the Bronze birch borer (*Agrilus anxius*) has already killed a very large percentage of the native birch, and its activities have discouraged the use of birch as an ornamental in many sections. The pine flat-headed borer (*Melanophila gentilis*) is responsible for many of the stag-headed sugar and Jeffrey pine trees in parts of California.

There are numerous other species belonging to this family, (*Buprestidae*) which help to kill trees but their greatest injury is probably to the timber itself since many bore into the solid wood and cause immense losses. The long-horned or round-headed wood borers furnish many species which work in the same manner as the flat-heads, but here again the principal damage is done by the grubs tunnelling in solid wood.

The second group of importance is the defoliators. Insects falling into this class belong mainly to the order *Lepidoptera* which comprises the butterflies and moths, and to the order *Hymenoptera*, which includes



NO, THIS IS NOT AN ASSYRIAN LOVE LETTER. IT IS A SECTION OF BARK SHOWING HOW THE BARK BEETLES MINE THE CAMBIUM OF THE TREES. THE TRANSVERSE GALLERIES ARE THE EGG TUNNELS MADE BY THE ADULT BEETLES, AND THE VERTICAL GALLERIES WERE MADE BY THE LARVAE



A SECTION OF DOUGLAS FIR SHOWING A PUPA AND A RECENTLY TRANSFORMED ADULT OF A FLAT-HEADED WOOD-BORER IN THE PUPAL CELLS. (*CHRYSOBOTHRI* *SYLVANIA*. FAMILY *BUPRESTIDAE*.)

the bees and wasps. There are too some important defoliators which belong to other orders, such as the elm leaf beetle, locust leaf beetle and other species which feed upon the leaves of various hardwood trees. These beetles, with the exception of the elm leaf beetle, are seldom numerous enough to completely defoliate and kill their hosts.

Among the moths are many well-known destructive pests, such as the Gypsy and brown-tail moth, the catalpa sphinx, the spruce bud worm, hemlock looper, the Pandora moth, numerous species belonging to the tent caterpillars, web worms and tussock moths, the case bearers and needle miners.

Probably the one species responsible for the greatest damage in this class is the spruce bud worm (*Cacoecia fumiferana*). For more than a hundred years this species has appeared from time to time in countless numbers, deposited its eggs upon the needles of spruce and balsam and the caterpillars have fed on the needles, often defoliating the tree host to such an

extent that it died or became so weakened that various beetles were attracted to it and death soon resulted from their work. Today from fifty to ninety percent of the balsam, over thousands of square miles in Quebec, New Brunswick, Nova Scotia and Ontario, as well as lesser areas in the New England states, is dead as a direct result of defoliation by the caterpillars of the spruce bud worm.

On an area of ten million acres in the province of New Brunswick the loss is placed at 700,000,000 board feet of spruce, and 7,267,000,000 board feet of balsam which, at present stumpage rates, would be worth about \$36,000,000. And this is in the province of New Brunswick alone. The moth has during the past few years become well established in British Columbia, Idaho, Montana, and is reported as injurious as far south as New Mexico. In Idaho it has been found feeding on hemlock, spruce, white fir, Douglas fir, cedar and yellow pine.

The eggs of the spruce bud worm are scale-like, pale green in color and deposited on the needles of the host. In ten days they hatch into tiny caterpillars which feed on the needles until cold weather when they hibernate. With the first warm days of spring they resume feeding until June. By this time they are full grown, about three-quarters of an inch long, and reddish brown in color. They then make a loose shelter by drawing clusters of needles together; inside of this the caterpillar changes to a brown chrysalid and ten days later the moth appears. The moth is a little less than an inch across the expanded wings and about one-half inch long, with a grayish brown body and reddish brown mottled front wings. The injury is all done by the caterpillars which feed on the needles and terminal buds, killing the host trees. In many areas the insects have appeared in sufficient numbers to kill ninety percent of the stand.

The hemlock looper is another small, light colored moth, the caterpillars of which feed principally on hemlock and Douglas fir. This insect works in much the same manner as the spruce bud worm and is said to have killed four hundred million feet of timber along the coast of Oregon and Washington and at the present time is infesting large areas of timber in Eastern Canada.

These two species, with the other defoliators mentioned previously, are charged with having killed more

than a billion dollars worth of timber in the past fifteen years.

The third important group is the wood borers, made up principally of beetles known as the long-horned wood borers and the flat-headed wood borers. In addition to these two families of beetles there are a number of others which work in the same manner. There are also many wasp-like wood borers belonging to the order *Hymenoptera* and some wood-boring caterpillars, most of which belong to the family *Cossidae*.

Of these wood-borers the long-horned beetles are the most important. Many of these insects are of large size, measuring over two inches long and the larvae of some are about the size of a man's thumb and when full grown three inches in length.

The adult beetle gnaws pits in the bark in which eggs are deposited. These eggs hatch into tiny white worms with strong jaws and ravenous appetites. The young larva begins at once to tunnel in the bark or cambium and as it grows stronger it enters the wood where it works from one to several years, tunneling through the sap wood and often into the heart wood, the mine growing larger as the worm develops. Larva may spend as much as fifteen years before the transformation to adult occurs. The mines of some species of flat-heads, which work in a manner very similar to the long-horns, reach a length of more than fifty feet.

These beetles work for the most part in dying or fallen timber or in logs, and where material is left in the woods for any length of time it is likely to be rendered useless for any purpose except firewood. Other species, such as the Western cedar borer, mine the heart wood of living trees. It is difficult and often impossible to recognize an infested tree until it has been cut.

The Pacific Coast shingle manufacturers suffer a heavy loss from this species as trees in which these insects have been working are rendered useless for shingles. Cedar poles are in great demand but the cedar heart-wood borers have worked so extensively in some sections that it is no longer profitable to attempt to get out poles.

What can be done to reduce the great loss of timber suffered each year from insect ravages? It is the purpose of the writer to discuss prevention and control in the concluding article of this series.



Copies of the Index of AMERICAN FORESTS AND FOREST LIFE for the year 1926, Vol. 32, are now available and may be had by application to the Headquarters of the Association, The Lenox Building, 1523 L Street, Northwest, Washington, D. C.

How Nature Overcomes Difficulties

By T. SCHANTZ-HANSEN

MOTHER Nature is ever resourceful and will always find a way to overcome difficulties that arise whether they be brought about by her own misdeeds or by the acts of man. In more interesting and striking way is this shown than in her manner of reproducing forest

growth. It is common knowledge that she stores much seed in the litter on the forest floor against the time when the mature trees will be removed, either through natural causes or by the hand of man. She has provided light seeded species so that areas heavily burned may be seeded up to stands of popple and birch, and the soil protected and enriched. She has given to

many trees the ability to sprout from the stump or from root suckers when the parent trees are gone. All these are interesting and necessary provisions for keeping the land from being idle, because nature is ever active and is always striving for the best.

One of the most unusual methods which nature has developed is found in our northern swamps where the enduring white cedar and the valuable black spruce each play an important part in filling a human need. Cedar supplies us with poles for our power lines, phone lines, fences and often ties for our railroads. The durability of the wood

recommends it for these purposes. Black spruce, because of its long fibre, is ideal for making the paper on which our newspapers are printed.

Both of these trees grow in swamps where the soil is largely peat covered with a thick layer of sphagnum

moss. The depth of the moss, the thickness of the peat, and the presence of water usually within a foot of the surface make growing conditions difficult.

An ecological study of the swamp made at the Cloquet Forest Experiment Station a number of years ago showed that the temperature of the first foot of soil did not rise above 32 degrees Fahrenheit until the first week in June, while

in the more protected spots ice was often found within a foot of the surface until the middle of July. By the month of September the peat in the upper six inches had reached a temperature slightly under 50 degrees Fahrenheit. Moisture determinations showed that at no

time was water less than 80 per cent by weight present in the soil.

Two essentials for the germination of seed are warmth and moisture. But the moisture must not be excessive. In the swamp, then, we find that the low temperature during the season when seed should germinate and the excessive moisture create a condition which almost prevents the germination of seed



THE BASE OF A BLACK SPRUCE, SHOWING BRANCHES COVERED WITH MOSS, FROM WHICH ADVENTITIOUS ROOTS WILL SOON STRIKE DOWN INTO THE PEAT BED BELOW



A BRANCH OF BLACK SPRUCE WHICH HAS ALREADY COME INTO CONTACT WITH MOSS, HAS ROOTED AND IS MAKING FINE GROWTH



A CEDAR SAPLING WHICH HAS BEEN TAKEN UP TO SHOW SPROUT GROWTH

except in very favored locations. Should any seed germinate it has a small chance of survival because of the depth of moss and peat through which the roots of the young plant must penetrate before reaching a layer of peat sufficiently decomposed to yield plant food to support it.

But nature has found a way to overcome this difficulty. In 1910 Mr. W. H. Kenety, then Superintendent of the Cloquet Forest Experiment Station, discovered that black spruce reproduces itself by a process which may best be described as layering. The branches of the tree are persistent

far down on the stem. The lower branches come in contact with the moss of the swamp which rapidly covers them, and adventitious roots are soon developed by the branch. These soon reach down to the layer of peat bearing the plant food. The end of the branch turns up and soon an independent tree develops. This accounts for the circular grouping of much of the spruce in our swamps. Very often the mother tree is still present and the successive generations can be traced through the old branch connections for as many as four generations.

White cedar was recently observed to have a similar ability of reproducing itself. Its branches are not as persistent as those of



A CLOSE-UP OF THE ROOTS FORMED ON A WHITE CEDAR BRANCH AFTER IT HAS LAIN IN CONTACT WITH THE MOSS, PLAINLY SHOWN AGAINST A BACKGROUND OF WHITE CLOTH

black spruce nor is their arrangement so regular about the stem. In the case of white cedar it seems to be the occasional branch that comes in contact with moss. This branch can then develop adventitious roots. More often this happens in young trees about one or two feet in height so that the connection is soon broken and disappears. Very often through some accident a young tree six or eight feet high is knocked down so that the stem comes in contact with the moss. The stem then not only

develops adventitious roots but new shoots as well along the length of it.

In these two peculiar ways has nature provided for the perpetuation of a class of trees which under ordinary circumstances reproduce only from seed but which grow where reproduction from seed is almost impossible. Of course, there is an occasional favorable location where a seedling will survive but the number of trees coming from this source is relatively unimportant.

Secretary Jardine Announces Grazing Decision

IN an address before the Salt Lake meeting of the American National Livestock Association, held on January 25, Secretary of Agriculture Jardine outlined in detail the position of that department with regard to its program of increased grazing fees on the National Forests.

Of first interest to the stockmen came the announcement that there will be no change in grazing fees during the present calendar year. A new schedule of grazing fees will be put into effect on a gradual scale from 1928 to 1931, inclusive—one-fourth of the increase becoming effective each year. This schedule had been recommended jointly by the Forest Service and by Mr. Dan Casement, a stockman who, last year at the request of the Secretary of Agriculture, made an investigation of grazing conditions on the National Forests.

"While the principle of fair compensation for the use of National Forest range is recognized in the interest of all the people of the United States," said the Secretary, "we will apply that principle in a moderate way with moderate increases adjusted to the existing conditions in the industry and with assurance against future changes unless the present conditions are materially changed."

Two additional points are covered by the Secretary's speech. First, the Forest Service will make a careful study of the relation of grazing fees to the current market value of livestock products with a view to determining whether such a method of establishing grazing fees should be adopted in subsequent range appraisals. Second, the Secretary pledged the best efforts of the Department toward securing ample appropriations for range improvements within the National Forests.

Thus Secretary Jardine, recognizing the public obligations that must be met in the administration of the National Forests, upholds the principle of maintaining fair compensation for public resources and the desirability of stabilizing the use of the National Forests by the livestock industry on a footing just and equitable to the general public. At the same time, the Secretary made clear that the Department is not attempting to charge all that the traffic will bear, but is seeking a means of disposing of the grazing controversy once for all and of securing the most effective cooperation between the De-

partment and the livestock industry. On an average for all National Forests the increase in fees will be about 45 per cent, representing an annual increase of approximately one million dollars.

The Secretary's address follows in full:

"After considering carefully all of the statements made at yesterday's meeting, I desire at this time to announce my decision regarding grazing fees on the National Forests. I am anxious to have this matter settled immediately, to clear the air of controversy and to prepare the way for much more effective cooperation between the stockmen and the Forest Service in dealing with the many problems and improvements where our interests are mutual.

"The Department of Agriculture will stretch a point to be absolutely fair to the grazing permittees on National Forests. We have no intention of charging the full commercial values that might be justified by comparison with private lands, or of getting all that the traffic would bear. We want to maintain the social and economic relationships that have always been considered in the allotment and administration of the ranges in National Forests. We don't want to charge anything that exceeds the reasonable capacity of the sheep man and the cow man to pay under the conditions confronting them during the next few years.

"At the same time, the Department of Agriculture must be just and fair to all the interests entitled to consideration in the administration of the National Forests. We can not ignore the obligations which these areas bear as public properties, maintained and developed at public expense, and with varied resources which many classes and groups of American people are entitled to utilize or enjoy. Specifically we can not ignore the return which the counties and county schools obtain from the receipts derived from the uses of the National Forests.

"It is my purpose to harmonize these two viewpoints or these two obligations of the Department, as fairly as the limitations of human judgment will permit. I want particularly to aid in establishing the livestock industry in such fair relationship to the National Forest interests and public obligations as a whole, that it may have a stable and assured place therein. I believe it would be

short sighted and ill advised for the industry itself to sacrifice this security for the sake of some small and temporary advantage.

"In line with these various considerations, I have approved recommendations submitted to me today by the Chief of the Forest Service in accordance with which no increases in grazing fees will be made during the present year of 1927. The schedule of fees previously recommended by the Forest Service and by Mr. Casement, which represent material reductions below the original range appraisals, will be put into effect on a graduated scale, beginning with 1928, and extending to 1931. The full rates under this schedule will be applied during the years from 1931 to 1934, inclusive. When these full amounts are put into effect, the average increase in the rate for cattle on all of the National Forests will be from 10.4 cents per head per month to 14.4 cents; and for sheep from 2.9 cents per head per month to 4.5 cents. In accordance with a request of the head of the Forest Service, furthermore, an opportunity will be provided to make further reductions which may be found equitable in adjusting the fees fairly as between the different National Forests and regions, and to make adjustments which may be needful to establish equitable fees between the different allotments on each National Forest.

"I have also approved the recommendations of the Chief of the Forest Service that in view of the social and economic purposes embraced in the administration of grazing and the interests of the general public in the National Forests, this schedule of fees be established as representing fair compensation for National Forest range under present conditions; and furthermore, this

being in my judgment the most important feature of the program, no changes in this schedule of grazing fees will be made for the ten-year period beginning in 1935, unless there should be a material change in the conditions existing at that time which affect the equitable determination of fair compensation for National Forest range.

"In other words, while the principle of fair compensation for the use of National Forest range is recognized in the interest of all the people of the United States, we will apply that principle in a moderate way, with moderate increases adjusted to the existing conditions in the industry, and with assurance against future changes, unless the present conditions are materially changed. This should set at rest the idea that the Department of Agriculture is out to get all that the traffic will bear.

"It is also part of our program to employ the best efforts of the Department to secure ample appropriations for range improvements in the National Forests; and to make a careful study of the practicability of relating grazing fees, in subsequent range appraisals to the current market value of livestock products. I am not yet satisfied that such a method is practicable; but we will give it thorough investigation in order to ascertain definitely whether the value of livestock products in

central markets may afford the most equitable basis of range appraisals for future use.

"And now let me re-emphasize the hope that we may put this controversy behind us and that today may mark a new period of effective cooperation between the agencies of the Department of Agriculture and the livestock interests."

Eternal Feminine

By THEODORA MACMANUS

The birch tree did a frightful thing:
She dyed her hair!
And though the others chided her
She didn't care.

She said that she was sick of green,
So common too;
She said she guessed that she would try
Another hue.

Said she: "Of golden-colored hair
I'm very fond."
And so one fine October day
Found her a blonde.

With pride she shook her yellow curls
Out to the sun;
And soon the others copied her,
Yes, every one!

—COLLIER'S, November 27, 1926.

Clifford Robert Pettis

CLIFFORD R. Pettis, Superintendent of State Forests of New York State, died on January 29, 1927.

Mr. Pettis was one of the first professional foresters graduated from an American forest school. He was graduated from Cornell in 1901 with a degree of Forest Engineer. After serving for a few months as Superintendent at the Chautauqua Assembly Park, and as Forest Assistant with the United States Forest Service, he entered the employment of the New York State Forest, Fish and Game Commission in 1902 as State Forester. Mr. Pettis served from 1902 to 1909 as Forester under Col. William F. Fox, Superintendent of State Forests, and from 1909 to 1910, under Austin Cary, Col. Fox's successor. Mr. Pettis succeeded Mr. Cary in this position in 1910.

His first work for New York State was in connection with the establishment of the first State forest tree nurseries in the Adirondacks in 1902, when a small nursery plot near Upper Saranac Lake was started.

He directed the larger nurseries which were established a few years later, started the Saratoga nursery in 1912 and, profiting by the lessons learned in the operation of these and other State nurseries of lesser importance and of a temporary character, evolved the present system of large nurseries consisting of the one at Saratoga Springs, said to be the largest forest tree nursery in the world, one at Lowville and one at Lake Clear Junction.

Pettis was admitted to be the best authority on forest nursery practice in America. He was author of the bulletin on Forest Nursery Practice, published by the United States Forest Service, the standard publication on that subject.

He was instrumental in securing laws in 1908 authorizing the distribution of forest planting stock to private

landowners. In spite of lack of funds, he raised the output of trees from State nurseries, from a few thousand trees seventeen years ago to over twenty million trees in 1926, with an output of 25 to 30 million anticipated for 1927.

He developed the State's forest fire control system from its inception in 1909 to its present state of efficiency;

directed the most successful fight any state has ever made against the Gypsy Moth, and the White Blister Rust.

Mr. Pettis had charge of the administration of the New York State Forest Preserve of two million acres, the largest and most valuable preserve of its kind in the country.

Perhaps his greatest accomplishment has been in connection with the acquisition of land for the Forest Preserve, in which for ten years the Conservation Department has expended an average of nearly a million dollars a year.

The selection and examination of all areas to be acquired, and the negotiations for purchase have been carried on by Mr. Pettis personally and under his personal supervision—a superhuman task accomplished with such steadfast honesty, such loyalty to the State's interests, and such faithful attention to detail that not

a breath of adverse criticism has ever been directed toward the expenditure of these vast sums of money.

Mr. Pettis has been the leading figure in the tremendous progress forestry has made in New York State in the past twenty years. Pre-eminent in his profession, his advice has been sought by the most prominent foresters the country over. That advice always so freely given has undoubtedly aided the success of many forestry projects.

Mr. Pettis is succeeded by his assistant superintendent, W. G. Howard, whose long years of effective service for the cause of forestry in New York State well fit him to carry on the administrative duties of that office.



CLIFFORD ROBERT PETTIS
Late Superintendent of New York State Forests.

National and State Parks

BY HENRY S. GRAVES

Part II

(Photographs by courtesy of the National Conference on State Parks)



NEEDLE ROCKS

This unique formation is found at Sylvan Lake, Custer State Park, in South Dakota.

THE State Park situation viewed as a whole seems more confused than that of the Government. In part this is because there are forty-eight states and there is little uniformity in the way they approach the problem. But this is a very favorable time to consider the principles of a state park policy because there is a wide and sympathetic public interest in the subject, and most states are at the very beginning of park development. The work already done by the National Conference on Outdoor Recreation, the National Conference on State Parks, and similar organizations is of great value and they furnish excellent instruments for diffusing information on the subject.

We are, I believe, on solid ground when we say that the State Park problem is in many ways different from that of the National Government. This is perhaps the first point to clarify, for it will lead to a definition of the respective functions of the two classes of parks.

If I am right in the views set forth in the first part of this paper it will be the character of the natural features only that should determine the location of National Parks, and there should not be an effort to develop a chain of National Parks primarily to secure a distribution of them in all sections of the country or in the majority of the states. They are designed to preserve certain extraordinary features of national as distinguished from local interest, regardless of where these may be located. The State Park has a local significance and is designed to serve the local interests of the state in which it lies.

It is for this reason, it seems to me, that the objectives of establishing state parks may be more diversified than in the case of National Parks. While one of the principal objects may be to preserve features of special scenic, historic, and scientific value, the standards need not be comparable to those of National Parks. Moreover the establishment of state parks with the specific purpose of public recreation is wholly justified and desirable. A second difference between the National and State Park problem relates to the size of the units. The National Park is ordinarily an area of considerable size, such as will justify the Government in setting up a federal establishment. The National Monuments may appear to be an exception, but these are areas now owned by the Government and are usually not far distant from existing headquarters of some federal agency. In fact they are administered only in part by the National Park Service. Those lying within the National Forests are administered by the Forest Service. The state may be more independent in establishing parks in small units, and this plan is being carried out in a number of states, as for example, in New Hampshire and Iowa. If the Government should adhere to the principle of restricting its Parks only to areas of National significance there will no confusion as between National and State Park functions. If the Government should embark on a policy of establishing federal parks with geographical distribution and local service in mind, there will be an acute question of distinction and one difficult of definition.

We approach the problem of parks in a given state with the knowledge that there exist areas that should be publicly owned to preserve their natural features and to serve for recreation or other public benefits. In some states there are, or there may be, National Parks, National Forests, or other federal reserva-



THE BEAUTY OF THE DUNES

Here, in Dunes State Park, the undulating sand in the foreground serves to emphasize the beauty of the picture, as the sky and the blue waters of Lake Michigan seem to meet and partially blend.

tions that will meet the local needs. Where this is not the case—and in no state will all the areas needed for park purposes be acquired by the nation—the state or county or municipality must take over this responsibility.

Many of the areas of importance both from a scenic and recreation standpoint are in the forest regions of the states. The state forest is an important factor in working out a successful forestry policy and program. In the natural course of building up a system of state forests there will be included areas of great natural beauty and interest. We may inquire at once whether it is necessary to have a special form of reservation called the State Park, and whether the interests involved in the idea of a State Park could not be fully protected through the State Forest system. The answer to this question is that it is entirely possible and some states are handling the matter in exactly this way as, for example, Pennsylvania. On the other hand there are undoubtedly in many states areas needed for park purposes that would not be ordinarily acquired as state forests. Many persons fear that there might be a fail-

ure to recognize the importance of such areas and the interests dependent upon them if the decision regarding their acquisition were in the hands of the state forest administration. There is the further fear that in the administration of the state properties the lands that do not involve any forestry problems may not receive the attention that would be the case if the state parks were organized separately. Thus, for example, a park on the seashore established to provide public bathing beaches would ordinarily not be thought of in connection with forest reserves, and the same is true of areas in the desert of the West that may require public protection to safeguard some features of historic or scientific interest. The justification for parks, separate from the forests, lies in the fact that the state park system would include areas in which there is no forest problem whatever. In the same way there may be a justification for separate wild life reservations because state parks or state forests would not ordinarily comprise all the areas that are needed.

There is much to say in favor of a combination of

the state preserves under a single title and a single administration, comparable to the systems of Europe. Nevertheless, there is so much attachment to the designations park, forest, and game preserve that we shall doubtless recognize these several types of reservation in many states.

Of greatest importance is the necessity to build up the reservations of different types coordinately. The reason for this is that all are of importance from a public standpoint and they all render the same service in certain particulars. All may be of service in watershed protection, all may protect scenic interests, all may constitute the home of wild life, all may be of value as recreation grounds for the public. If the purposes of the different types of reserve are not considered in common, an ill balanced program of reserves may result. Thus in New York the interests of public parks overshadow those of public forests, and the state is not developing a well distributed system of state forests such as public needs require. In other states the reverse is true and there is not an adequate interest in acquiring the areas of special public interest that would

not normally be included in state parks.

It is obvious that in most states the largest areas will be acquired as forest reservations. Even though these areas include splendid scenic features, there ordinarily is no justification for creating two forms of reservation side by side. All the public interests involved in the conservation of the aesthetic values, in the development of recreation, and propagation of wild life may be safeguarded under the forest administration. The public forest system is usually built up about the wild lands of the state. These are the areas in the hills and mountains where there are extensive areas of poor soil and where compact areas of forest land can be obtained. Sometimes there may be some special features in such regions justifying the segregation of certain areas as state parks. More often the state park will be located near the center of population, or will involve the acquisition of a lake shore, or seaside tract, or some area of special scenic value that is detached from any continuous areas of forest growth.

Generally speaking the state forests are being built up by acquiring first the cheaper lands. Legislatures



Ten Thousand Lakes of Minnesota Association

IN ITASCA STATE PARK

Lake Itasca, headwaters of the Mississippi River, and located in Itasca State Park in Minnesota, is one of the most famous beauty spots in this "Land of Ten Thousand Lakes."

have been hesitant to appropriate money to acquire valuable commercial timber. In some cases the appropriation acts carry a clause limiting the amount that can be expended per acre for land acquisition. This is not wise policy, but so long as there is a great deal of cheap land available that ought to be acquired, the states are able to go forward with the establishment of the state forests. Under this policy opportunities are lost to acquire tracts covered with mature timber that should be publicly owned from a forestry standpoint and areas that should be preserved on account of their scenic interest. Sometimes it is possible to acquire such stands of timber in limited quantities as state parks. The action of the California Legislature in acquiring redwood groves is a case in point, though the bulk of the state redwood lands recently acquired have been bought by private subscription through the Save the Redwoods League and then presented to the state.

In building up the various public reservations the fact that cheap lands can be secured in the remote regions for forest purposes and the fact that the state forest involves definitely large economic benefits is the reason that some legislatures give more consideration to appropriations for forests than parks. Naturally lake shores, seaside beaches, attractive points on rivers, and lands near centers of population are more costly than inaccessible and cut-over lands in the back country. In such cases the forestry interests should join hands with the park interests to secure a balanced program of public reservations.

The development of a system of state parks must be brought into coordination with municipal parks. How far should the state go in providing recreation grounds near a city? If the benefit is primarily for a specified

city the responsibility for acquiring and administering public playgrounds certainly does not belong to the state. On the other hand there may be some scenic features near a city or town which are of distinctly state-wide interest. In such a case the state should not hesitate to acquire it, even though the locality may receive a great benefit from it as a local recreation area. There are often areas at no great distance from one or another

city which should be publicly owned as parks but whose use for recreation extends far beyond any one community. An example is found in the shore park situation in Connecticut. It does not require much local study to see that certain areas have a dominant local value and should be acquired by the neighboring municipality, and that others would be used in common by citizens from many communities and, therefore, have an importance from the standpoint of the state itself.

There is no formula to indicate just what lands should be publicly owned in a given state. A program can be built up only by local study and field surveys. Already a number of states have made such studies with reference to the public forests and a program of acquisition has been formulated that shows the location of the desired units together with the approximate size of the projected public forests. Similarly a number of states have clearly in view a program of state parks and

are following the program as funds can be secured from the legislatures.

One cannot proceed very far in a study of the state park problem without encountering the question of organization and administration. One of the matters that constitutes a standing issue is whether there should be separate organizations to handle state parks and state forests or whether the parks should be administered



PINNACLE ROCK

A remarkably interesting example of erosion, found in Buttermilk Falls State Park, in New York.

by the state forest service. The scope of this paper does not permit the consideration of the different factors involved in this problem. It is pertinent to mention it because the controversies caused by the question have on various occasions threatened to retard both forest and park development. Generally speaking the creation of separate and uncoordinated organizations to handle two classes of public reservations as the parks and forests is exceedingly dangerous. This is the present plan of federal government and works very badly. It has been tried by certain states, also with bad results. On the other hand it is sound administration to have separate forest and park organizations if there is provided by law a definite means for coordination of effort and joint action in common problems. It would carry us too far to explain the different ways that this could be accomplished under the widely varying forms of organizations existing in the different states. Suffice it to say that one plan involves a central conservation commission charged with the direction of the several agencies which direct the forests, parks, and other reservations. In this case the coordination comes from above. Another plan is that of Connecticut where the several commissions appointed to handle public forest, park, and wild life matters are by law authorized to come together as a super-commission to administer questions that involve more than one class of reserve. Other means might be suggested, to meet the peculiar needs of a given state. The essential point is that if there are two separate commissions, or bureaus, or services, handling respectively the public forest interests and the public parks some machinery should be provided by law that will automatically cause them to work together in matters of mutual interest. In this as in other phases of the problems discussed in this paper, the best progress will be made when those concerned with any given class of reservation bear constantly in mind that we are dealing with a great system of publicly owned properties and that the different parts of the structure must fit together if it is to serve its purpose.

Western Skunk Cabbage

By ANDERSON McCULLY

THE western skunk cabbage (*Lysichiton kamtschatcense*) is an evil smelling marsh herb of such handsome foliage and brilliant yellow spathes enveloping the fleshy peduncles of tiny flowers that it invariably attracts the eye of the traveller from a distance. But while I have often seen it gathered, only once have I met a man with sufficient hardihood to bear it triumphantly all the way home—and the lady promptly set it outside the window!

A member of the arum family, this plant is found in large numbers in marshy spots of the forests throughout the Northwest mountain regions, and even down to within

a few yards of tidewater. It greatly resembles the white arum lily except that the spathe is erect and pointed, extending somewhat over the flower spike. The rootstock is



THE SKUNK CABBAGE IS A HANDSOME PLANT BOTH AS TO COLORATION AND FORM—BUT IT IS MUCH MORE APPRECIATED FROM A DISTANCE THAN AT TOO CLOSE RANGE!

thick and horizontal, and the huge leaves grow from one to four feet long, ranging as wide as eighteen inches. The fruit consists of fleshy berries immersed in the spongy axis of the spadix.

The particular shade of yellow seems to be one of Nature's best effects against the deep still greens of the dense hemlocks and firs and cedars where it is so often found. Looking down into a ravine upon scattered masses of these as they follow the course of some tiny streamlet beneath the tall trees swaying overhead is to see them at their best.

An Ancient City Forest

"The City of Zurich in Switzerland has owned a forest for 1,000 years. It has been so carefully regulated that it has furnished a definite amount of timber each year for 600 years, and is today in better condition than ever before."—*Parks and Recreation*.



EDITORIAL

Forestry in Pennsylvania

IT is perhaps natural that the action of the new Governor of Pennsylvania in replacing Robert Y. Stuart as secretary of the Department of Forests and Waters, should be the subject of widespread speculation and concern among those who have the progress of state forestry at heart. Although Governor Fisher's action was not wholly unexpected, it had been hoped that he would keep intact the splendid forestry organization headed by Mr. Stuart, a trained forester of wide experience and distinguished accomplishments. Instead, he not only failed to reappoint Mr. Stuart, but he named as his successor a newspaper man with no particular training or experience in forestry and conservation.

Under the able leadership, first of Gifford Pinchot as Commissioner of Forestry, and later Mr. Stuart as Secretary of the Department of Forests and Waters, Pennsylvania has, in less than a decade, taken front rank in state forestry. The administrative code of 1923 brought about a complete coordination of forest, water, park and mineral resource activities of the state government under the Department of Forests and waters. State forestry was by far the most important work of the Department. Governor Pinchot, therefore, naturally selected as secretary of the Department a trained and experienced for-

ester. In Mr. Stuart he chose a man known for administrative ability, broad grasp of forestry, and tireless energy as a public servant. Mr. Stuart made a fine record of accomplishment which unfortunately seems to have had little weight with Governor Fisher. As matters now stand Pennsylvania virtually does not have a chief state forester, in that the present secretary is untrained and inexperienced in that field.

In what has been said, no criticism of Mr. Stuart's successor, Mr. Charles E. Dorworth, of Bellefonte, Pennsylvania, publisher of the Bellefonte Republican, is meant. He has been called for public duty. His record is before him and by that record will he be judged. Upon him rests the responsibility of continuing Pennsylvania's forward movement in state forestry. It is a large responsibility for a man unschooled and untrained in forest work. We have no doubt that Mr. Dorworth fully appreciates the responsibility of his position, and that he will be quick to place an able and experienced forester in charge of the forestry work of his department. Certainly, in his every effort to uphold Pennsylvania's leadership in state forestry, he should have the whole-hearted cooperation of foresters and laymen alike.

The Grazing Fee Issue

THE action of Secretary Jardine in announcing a definite decision with respect to grazing fees on the National Forests should go far to dissipate a controversy that has smoldered and flamed in and out of Congress for the past five years. The Secretary's announcement was made at the Annual Meeting of the American National Livestock Association, at Salt Lake, on January 25. He told the stockmen that the grazing fee issue should be settled immediately in order to clear the air of controversy and make possible more effective cooperation between the industry and the Forest Service. The Department of Agriculture, he said, desires to be absolutely fair to the grazing

users of the National Forests and has no intention of exacting fees on the principle of charging all that the traffic would bear.

Under the Secretary's decision a new schedule of grazing fees, increasing present fees approximately 45 per cent, are to be put into effect on a graduated scale, beginning with 1928, and extending to 1931, after which the full rates will apply for a period of four years, or to the end of 1934.

Many persons, no doubt, will feel that the Secretary has been too lenient in his methods of applying the determined value of National Forest forage. This seems to us of minor importance. Of far greater im-

portance is the definite settlement of the grazing fee issue which has been the red brand in a long grazing controversy characterized by inaction on the part of the Federal Government and political maneuvering on the part of the stockmen. The schedule of fees which Secretary Jardine has established may or may not represent the full value of the range, but in the view of the Chief Forester it does represent fair compensa-

tion under the social and economic conditions which must be considered in administering the National Forests. That principle, once established and accepted by both the stockmen and the public, should provide a common ground on which all other grazing questions can be speedily and fairly adjusted, and the National Forests developed to their highest public usefulness.

Forestry Reaction in Bay State?

THE inaugural message of Governor Fuller to the Massachusetts Legislature in which he recommended that the further planting of trees on state forests be halted, and that the department of conservation be consolidated with the department of agriculture has aroused a storm of protest among the conservationists of that state. All of the reasons which led the Governor to make these startling and reactionary recommendations were of course not given, but it is to be presumed that he had at least given the matter careful consideration. His reasons for subordinating forestry to agriculture must have been strong indeed, in view of the fact that this plan has proved a failure in practically every state where it has been tried.

Massachusetts has been one of the leaders in the forestry movement. It is an industrial state and uses immense quantities of wood. One-third of its forest land is lying idle, and much of this cannot be reclaimed except by planting. It is already feeling the pinch of

the timber shortage, because it is importing over 80 per cent of its lumber requirements. The people of that state are paying more for the freight on much of the lumber they use than it would cost to grow good lumber on the idle acres at home.

On the other hand, Massachusetts has as good forest laws as are to be found in any state, and it is a leader in the town forest movement, 77 of its townships having established forests and having planted over 1,000,000 forest trees. With the towns spending their own money in this work, it seems unbelievable that they will accept without question a proposal of their chief executive which is at variance with the best thought on the subject throughout the entire country. Unless more commanding reasons for these recommendations are forthcoming than have yet been advanced by the Governor, the conclusion must be drawn that personal rather than economic motives have prompted his action. Is it possible that forestry is to become a political football in Massachusetts?

Before or After Destructive Lumbering

IN the purchase of forest land by the several States, and by the Federal Government under the Weeks Law, the question often arises, shall the money be spent for cut-over land or for land upon which timber is standing? Arguments are advanced for both. Cut-over land shows up well in reports. Many acres at a low average price appeals to legislative committees. On the other hand, it is very difficult to make a business showing on cut-over land except after a long period, often fifty years. Meantime, these properties are a source of expense for protection from fire, and for any improvement cutting that from time to time is necessary.

It is a frequent experience among foresters that well-stocked lands can be acquired at the timber values, and that the land itself is acquired without cost. An illustration occurs in the White Mountain National Forest. In the heart of the purchase area, at the headwaters of the Merrimack River in the Township of Waterville, 22,500 acres are about to be logged off by the destructive method. A logging railroad is being assembled to be laid in early spring. It is almost universal experience that forest fires spread from logging railroads. Waterville has never had a forest fire, but neighboring

tracts show the painful results of fires and excessive erosion.

The holding company paid one million dollars a year ago, and is willing to sell at cost, plus interest and taxes for one year, without exacting a profit. Estimates, it is said, indicate that the value of the spruce timber alone will fully cover the purchase price, and that the Government will acquire in addition all of the land, the hardwood timber, none of which has ever been cut, and all of the young growth on portions of the property that were cut for spruce logs thirty years ago. It appears to be an excellent bargain.

In his message to Congress of December 6th, President Coolidge indicated that he would recommend an additional million dollars in the budget for the acquisition of forest land, if the bill pending in Congress is passed. This refers to the McNary-Woodruff Bill (S. 718), which has passed the House in modified form and which is pending in the Senate. Will the Senate include this measure in its crowded program prior to adjournment? If not, the matter would warrant action through the Deficiency Bill.



*With Three Large Eucalyptus Trees in the near Background, This Bit of Formal Garden Work Is Made Especially Attractive. Tree Roses, Ball-shaped Privet, Ferns (*Asparagus plumosus*) in Pots, and Flowering Annuals Are Charmingly Combined in the Planting.*

Gardening Against A Background of Trees

By CHARLES ALMA BYERS



NOTHING helps quite so much to make a home outwardly attractive as well-planned grounds. An architecturally perfect house in a nondescript setting is like a beautiful woman ill-fittingly gowned—uninteresting, disillusioning. On the other hand, a quite commonplace house is often made into a thing of real beauty—redolent of charm, character, alluring atmosphere—merely through an effectively gardened environment.

And nothing is more helpful in the making of a beautiful and enjoyable garden, as an enhancement of the external appearance of one's home, than trees. Trees lend, first of all, distinction and a generally charming atmosphere, but they also serve a multiplicity of purposes. Every garden, of course, should have some



Two Well-developed Cocos Palms Stand out Prominently in This Picture, with a Veritable Mass of Eucalypti beyond.

logical starting point, something from which to begin planning and building the arrangement that is to be developed. Trees provide this starting point more appropriately than anything else. Truly, it may be offered as a maxim: To build a beautiful garden, first plant a tree.

However, in this planning of the house's setting, it is, of course, essential that trees be handled judiciously. Kinds, number, placing, possible future growth, and other factors should be taken into careful consideration. The kind or kinds chosen will be more or less regulated by the size of one's grounds, the general effect one may wish to create, whether formal or informal, and by the range of selection dictated by one's particular locality. The size of grounds will also largely govern the number that may be successfully used. Naturally, the placing, as well as the kinds of trees, may not always be optional, for sometimes one is fortunate enough, and in that case fortunate indeed, to have at least some trees already



Tall Eucalypti at Its Back, a Lacy Pepper Tree Spreading Its Branches over the Steps on the Right, and Cotoneasters (Horizontalis) Building a Low Bank before It, Combine to Give This Garden Retreat an Especially Restful Atmosphere.

provided. The main point is that, whatever their location or their kind, they be made, through the garden work to follow, to fit into the general scheme as if they had actually been placed there with well-studied forethought. And the possible future growth of the trees, dependent upon species, soil conditions and environment, deserves consideration since, properly, a garden is not planned for immediate or quick show only, but for the years that follow.

Briefly, the situations to avoid in the use of trees about the home are utterly formless arrangements, wild or untamed wilderness effects, undue crowding, and over-shading of the grounds. The results to be striven for are characterful groupings, interesting vistas, beauty-lending backgrounds, shaded retreats, and splotches of sunlight.

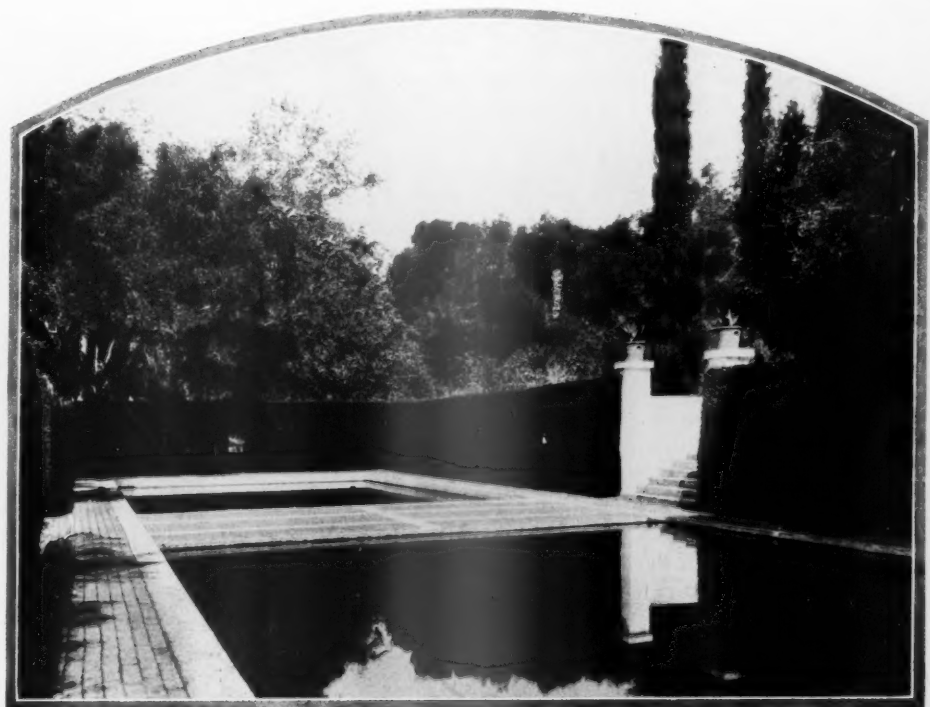
But trees also serve utilitarian as well as decorative purposes about the home. Often they serve in both capacities. For even when furnishing the legitimate start-



This Garden Gate Is Overhung by the Branches of a Live Oak and Attended on the Side by Boxwood and Ball-shaped Golden Privet.



Trees for Screening in the Private Garden Swimming Pool Are Particularly Desirable. This Pool, Immediately Enclosed with a High Hedge, Is Surrounded by Live Oaks and other Trees, among which, on the Right, Arise Sentinel-like Italian Cypresses.





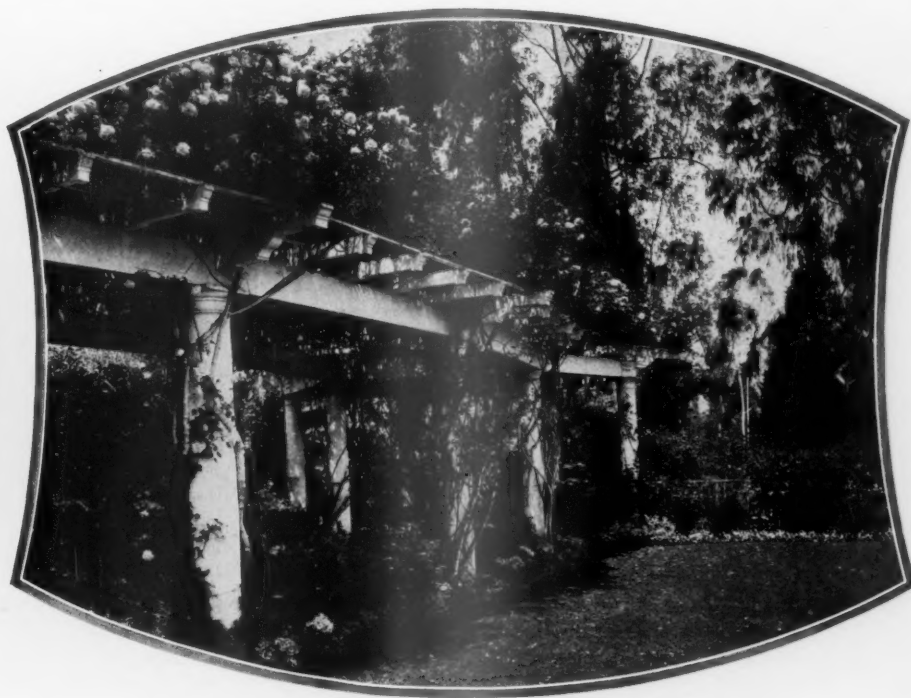
Here a Stucco Garden Wall Is Used as the Direct Background to an Assorted Scheme of Border Planting, but beyond the Wall Rise Live Oaks, Pepper Trees and others. The Wall Planting Includes Sea Heather, Snapdragons and other Flowering Plants.

ing point for planning a garden, or when constituting an effective background for other planting, they are also proving both a utility and an ornamentation. In providing shade for garden seats or other inviting resting places, they are especially worthy of this two-fold classification, and when, for instance, they are used about a private swimming pool to screen against prying eyes or for giving privacy or seclusion to the grounds generally.

Home-owners of the West have come to regard trees for gardens with quite especial favor in recent years—this, too, in spite of the fact that they must very largely resort to having them transplanted to their grounds, and to irrigation for keeping them alive and thriving. Where today stand many of the larger cities of the West there originally existed little more than desert-like or sand-dune wastes, all but barren of any of the larger forms of vegetation. Today, almost every garden in these communities now has its tree or trees.



All but Walled in by Cedars and other Evergreens Shown Here, with a Sundial at Its Center, Illustrates the Idea of Gardening against a Wall. The Oval above Shows the Beauty of a Garden by Good Tree Planting.



In a Lovely Sunny Open Location, this Rose-covered Pergola Is Made to Stand out with Effective Prominence against a Background of Picturesque Eucalypti.



and other Evergreens, the Bit of Garden-land at Its Center Feature, Well Illus-
trating against a Background of Trees.

Beautiful a Classic Entrance, Enhanced
Good Tree Planting.

And the kinds of trees that have come to be used in Western gardens are numerous and various—many of them importations, some of them native.

The palm family, of which there are a score or more species employed in gardening on the Pacific Coast, is particularly prominent. Some of the species, like the *Phoenix canariensis* (ornamental date palm), *Chamaerops excelsa* (windmill palm), *Erythea edulis* (Guadalupe palm), and the Washingtonias, *W. filifera* and *W. robusta*, are generally suited only to grounds of considerable extent; but there are others, such as the slender and graceful *Cocos plumosa*, the feathery-leaved *Cocos australis*, and the plummy *Cycas revoluta*, that are charmingly adaptable to any size scheme.

The eucalyptus family, also comprised of many species, is extremely popular. The taller-growing kinds, such as the *E. globulus* (blue gum), and a number of others, are mainly suitable for large estates only, but there are several of lesser growth,





A Garden Gate of Simple but Pleasing Design, Made to Stand out Attractively against a Large Pepper Tree and Shrubbery Planting.

such as the *E. ficifolia* (scarlet gum), *E. leucoxyton rosea* (pink ironbark), *E. sideroxyton rosea* (rose ironbark), and various other species, which, sparingly used are often found in quite small grounds. While most of them produce flowers, usually of white, creamy white or some shade of pink, these trees are grown mainly for their foliage and graceful appearance, and constitute excellent background effects. The gently swaying branches of the eucalyptus seem to give a mysterious restfulness to a garden that makes them especially desired.

The acacias, with more than a dozen kinds in common use, are also much used in Western gardens. Some of them have their chief attraction in the foliage, notably the *A. baileyana* and *A. pruinosa*, the first having feathery silver-colored leaves and the last an effective blending of light, pale green with soft rose color. Several, however, are especially in de-

mand for their flowers. These include the *A. Cultriformis*, with a profusion of bloom in deep golden yellow; the *A. longifolia floribunda*, producing fluffy globose flowers of varying shades of yellow; the *A. melanoxylon*, with flowers of a very light yellow, and the *A. podalyriacifolia*, bearing unusually large globose flowers of dark yellow. The *A. decurrens dealbata*, with feathery, fern-like foliage varying from silvery to green and bearing in winter profuse clusters of clear yellow flowers, is grown for both its foliage and bloom.

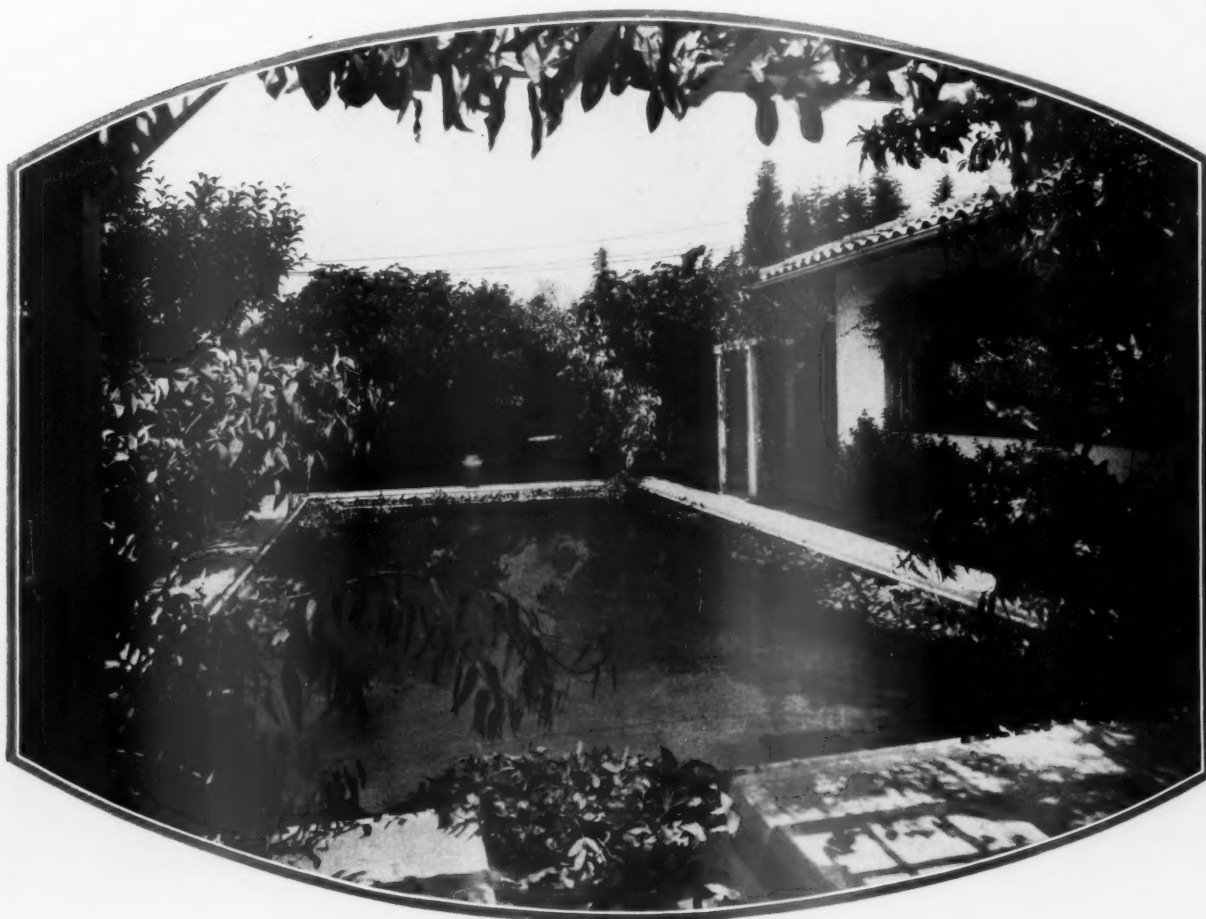
Among the smaller tree families there are the California live oak (*Quercus agrifolia*), pepper tree (*Schinus molle*), Southern magnolia (*M. grandiflora*), camphor tree (*Camphora officinalis*), flame tree (*Sterculia acerifolia*), carob (*Ceratonia siliqua*), jacaranda (*J. mimosaeifolia*), rubber tree (*Ficus macrophylla*), and various others. The flame tree, with light green leaves and at blooming time fairly a mass of brilliant scarlet-colored flowers in large trusses, is a particularly showy and desirable garden tree.



An Alluring Pergola-covered Walk, with Its Mantle of Profusely Blooming Wistaria, Makes a Beautiful Garden Feature.

All of these are evergreens. In addition and also in the evergreen class, are the conifers. These include the firs (*Abies*), cedars, cypresses, junipers, pines, spruces, arborvitaes (*Thuyas*), and so forth, each represented with several kinds. The *Cedrus deodara*, from the Himalayan mountains, growing in showy pyramidal form from the ground up, has become especially popular in California gardens. The Italian cyprus (*Cupressus sempervirens fastigiata*), Lawson cyprus (*Chamaecyparis lawsoniana*), Monterey cyprus (*C. macrocarpa*), and blue Mt. Atlas cedar (*Cedrus atlantica glauca*) are also great favorites.

Popular among the deciduous ornamental trees are the Lombardy poplar (*Populus nigra italica*), Carolina poplar (*P. monilifera*), Texas umbrella tree (*Melia azedarach umbraculi-*



A Small Swimming Pool Is a Delightful Back-garden Feature, Especially when It Is Screened in by Trees and Lovely Flowering Shrubbery, as This One Is.

formis), maple (*Acer dasycarpum*), empress tree (*Paulownia*), several of the mulberries, and other kinds.

But trees, although always beautiful, useful and desirable about a home, do not in themselves alone make a garden. They need to be accompanied by other planting, and usually by certain architectural features, such as invitingly furnished nooks, pergolas, summer houses, pools, fountains, decoratively placed seats, and so forth. Trees, in short, aside from their purely utilitarian uses, properly comprise the foundation, the setting, the background of the truly well-planned garden. And into the garden scheme, through the other planting, and such architectural features as may be employed, they should be made to blend harmoniously, naturally. The secret of good gardening is to strive to make every view a beguiling picture. The planting should not be too profuse, either in quantity or in growth, and,

generally, it should be grouped or massed, to produce outstanding effects, rather than employed in an expansive or sprawling fashion. Then, between these grouped plantings will lie open lanes, regular or irregular in shape, to be occupied by a graveled or flagged walk, or merely an expanse of well-kept lawn flooded or dappled with sunlight. When these simple rules are followed the open places charming in themselves as vistas cause the planting to stand forth with spot-light effect, and give the garden form and character. The whole becomes a thing of pictorial beauty.

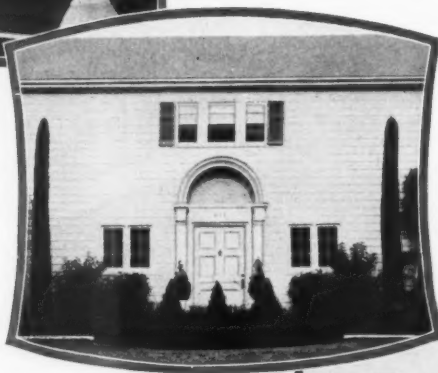
And somewhere in the background of all such beauty spots should be a tree or trees. Such a background makes the picture stand out in added distinctness and charm, and produces a "fade-out" for it that leaves no jar for the senses.

Shrubs should be selected carefully, both as to what they will contribute to the color scheme and as to the growth they will eventually attain. The species for producing the desired results will naturally be more or less governed by locality.

Privet of various kinds, some used for separate planting and some for hedges, is, of course, found in nearly every garden, as is also true of boxwoods, *Euonymus*, low-growing arborvitaes, dwarfed



*Doorway and Approach Plantings of Distinctive Tree Types Lend the Final Touch of Dignity and Beauty. Here, Centered near the House, Is a Fine Young Deodar Cedar (*Cedrus Deodara*), much Used in Southern California Gardens.*



A Well-balanced Arrangement of Italian Cypresses, Boxwood, Privet and Shrubs Give Real Character to This Doorway Planting, and Dress Distinctively the Otherwise Quite Plain Front of the House.

*An Effective Shrubbery House Planting Here Called for the Use of Deodar Cedar, Italian Cypress, Arborvitae, and semi-trailing Juniper (*Juniperus sabiana*).*



cypresses, and so forth, to say nothing of the invariable profusion of tree, bush and climbing roses. Then, too, there are dozens of different kinds of vines for walls, fences, pergolas and other supports, with the *Bougainvilleas*, wisteria, bigonias, *Ficus repens* and ivies always popular.

The finishing touches in the making of a beautiful garden are naturally supplied by the flowering annuals. In them is provided the medium for giving almost any addition of color to one's scheme. They also allow one to vary the outstanding color effects from year to year.

The writer recalls, in this connection, the work of one home-owner with annuals, perennials and similar flowers in particular. His house was small and modestly designed, of warm cream stucco finish, but from the street it was always a little gem of beauty. Over the tiled, one-story roof rose a single towering eucalyptus, and across the front, against the house and back of a small, plain lawn, always reached a low border effect of flowers, invariably of but one color. One year it would be of blue cornflowers, another year of golden yellow coreopsis, another of scarlet geraniums edged with "dusty millers," and still another of Shasta daisies. His scheme was simplicity itself, but it never failed to evoke the admiration of passers-by. And therein lies an idea well-worth remembering.

How and When to Prune

By H. S. BARTLETT

THERE was a time when the question of when to prune could be answered with one word, "February." But in late years those familiar with the art of tree trimming have found there is no set time for moderate pruning, although generally speaking, the best results are obtained by thinning out the trees in early spring before the sap has started. On the other hand, many orchardists and horticulturists make a practice of heavy pruning in the fall.

In reality a tree may be pruned at any time of the year if care is taken in the selection of the branches to be removed so as not to make the operation too severe. When considerable pruning is necessary all of the limbs should not be removed at one time, and it has been found advisable to do a small amount of trimming each year to get the best growth from young trees.

Many well thinking people criticize the horticulturist who removes branches which are apparently in a healthy condition, and feel that the only pruning necessary should be on branches which are diseased, or broken. Some may feel that nature has provided for the care of the trees without artificial means. This is not entirely correct for the horticulturist has learned by practical experience that trees properly pruned flourish, and also that fruit trees trimmed in accordance with the best methods bear fruit abundantly, when trees not pruned soon cease to have

the health that makes them valuable.

Much can be said on the art of pruning, and of the tools one should employ in this work. In the first place, care should be taken at all times that sharp cutting tools are available to stimulate the healing process after the wounds are made. Only a smooth uniform cut can heal properly, and this obviously can only be made with tools correctly designed.

Several styles of hand pruning shears are available, but it is well to bear in mind that the care of these tools is also of great importance. Where the branches to be removed are high up the operator usually employs a long pole tree trimmer which likewise can be obtained in many styles. For large branches saws are required. One type can be used on branches high up by means of a long pole and rope.

These tools should be used frequently during the early life of the trees, and they will respond so that, as they grow older, only a very limited amount of pruning will be necessary.

Tree trimming for commercial purposes is being practiced by telephone and telegraph companies, as well as light and power companies employing overhead

lines. This type of pruning, while usually on older trees, can be regulated to give the same valuable appearance to the tree as in the case of the smaller tree. Many State universities are now offering a course in this work to teach the prospective tree trimmer proper methods.



IN PRUNING, THE PROPER TOOL IS THE GREAT ESSENTIAL. HERE THE LONG POLE AND ROPE PRUNER ARE BEING USED FOR HIGH BRANCHES



I Thank Thee, Lord

For mornings, noons and nights beneath the sky;
For gentle flowing streams that murmur by;
For smoke-blue haze on distant mountain sides;
For drowsy fields where deep content abides;
For lonely dunes where angry seas have wept;
And for the heights where no man's foot hath stopt;
For mist of green among the willow trees,

Herald of Spring and all her mysteries;
For stars low-hung above the desert waste;
For canyon depths by water fingers traced;
For evening sky aflame with sunset light;
And for the velvet darkness of the night:
For these, Thy words that move in sweet accord,
I render up my grateful thanks, O Lord!

Nita Van Housen.

Annual Meeting at New Haven

Record Gathering Awakens Mutuality of Interest

HISTORIC New Haven was the scene of the 1927 annual meeting of The American Forestry Association held on January 28 and 29. It was a joint session with the Connecticut Forestry Association at the New Haven Lawn Club. The annual meetings of The American Forestry Association have, for years past, been occasions for conservationists and foresters from all parts of the country to join together in a discussion of present problems and in surveying the work ahead. Yet in many ways the 1927 meeting was the most significant ever held. The attendance numbered around four hundred; the speakers were leaders in their respective fields, and through the whole meeting there flashed time and again with inspirational effect a common recognition of mutual interests, economic as well as sentimental that imbued the forestry movement with new powers for broader vision and larger accomplishment. In brief, the meeting marked a new era for American forestry.

Added interest was given this meeting because of the fact that it was held in New Haven, the birthplace of the Yale Forest School—a graduate school in forestry that has given a large number of prominent foresters to the country.

Colonel Henry S. Graves, president of the Connecticut Forestry Association and a past president of the American Forestry Association, presided at the first session which was called to order Friday morning at ten A. M. In the absence of the Mayor of New Haven, the Secretary to the Mayor welcomed the members of both associations in behalf of the city.

"The history of forestry covers a period of half a century," said Colonel Graves in his opening remarks. "The first twenty-five years represented the first beginnings, the laying of foundations of public knowledge of the importance of the proper care of our forests, the establishment of a Governmental bureau of forestry, the first legislation in Congress looking to the establishment of federal forest reserves, the inauguration of a policy of state forestry in several states and the establishment of our first schools to train technical men to carry on the work of forestry.

"The beginning of the present century marked the inauguration of a new era in forestry. It was then that the Federal Government undertook seriously and in a large way to protect and properly administer the forests comprised in the public domain. It was the stimulus of the activities of the Government that set in motion the



These are just a few representative delegates of the over 400 who attended the joint meeting of The American Forestry Association and the Connecticut Forestry Association to discuss and coordinate activity along the most important forestry problems of the day.

aven Gives Forestry New Force

ality of Interest and Need of Larger Vision

movement of forestry that in a short period of twenty-five years has entirely changed the attitude of the nation toward the forest and its problems.

"We are now entering still another period in forestry. We have passed the initial stage of general education regarding the significance and importance of forests to the country. We have passed the first stage of protection requiring that chief attention be directed to the question of preventing disastrous forest fires. We have reached the point where we can begin in an extensive way to restore what has been destroyed, to improve the forests that have been injured, crippled, and degraded, and to utilize the matured and maturing forests skilfully with a view to the continuance of their productivity."

Following Colonel Graves, Mr. George D. Pratt, recently re-elected President of The American Forestry Association, spoke on "American Forestry Today."

Mr. Pratt said in part: "Today we meet with you to take common counsel and to measure in a spirit of constructive endeavor the larger problems pressing for solution in the field of forestry and conservation."

"In coming to New England this year we feel especially honored because it is here that forestry has its roots well in the soil. Here its people are forest-minded

in the sense that they are alert to the intimate relations of forest land use and public welfare, locally and nationally. And we are particularly honored to meet here in Connecticut in the atmosphere of historic Yale University, whose contributions to the cause of popular and scientific forestry are recognized throughout the world. Such men as Gifford Pinchot, Henry Solon Graves and William B. Greeley typify in the highest the Yale spirit of public service. For another reason I am glad that we have come to Connecticut this year. Yours is one of the few states which has had the public courage to attempt through law to bring together and harmonize its forest, park and wild life activities. I am certain that I voice the conviction of everyone who has watched your progress when I say that the leadership of your State Association has been that of a militant and patriotic body of real doers.

"Dominating the forward steps in national forestry during the past half decade is the acceptance by states, private timberland owners and the National Government of the cooperative principle exemplified by the Clarke-McNary Act, passed by Congress in 1924. After years of prolonged controversy the Act signalized the coming together of all groups who said, in effect: 'We have



THOSE PRESENT
The Connecticut Forestry Association in annual session in "The City of the Elms"—A meeting which did much to stimulate interest among the most progressive forestry lines.

argued at great length the many problems involved in assuring ourselves plentiful forests for the future, and we have got nowhere. We agree that the nation as a whole must have forests and must therefore assume its rightful share of responsibility. We agree that the states likewise have a duty in protecting the forest interests of its people. We agree that private forest owners who hold title to three-fourths of our forest land likewise have a public obligation. Let us agree then on a reasonable division of responsibility, write it into a law and pull together, each bearing his fair share. And let us not forget that it will cost money as well as effort, and that this principle of cooperative effort must meet the test of accomplishment.'

"Congress accepted the principle as the basis of our American forest policy. Let us consider briefly for a moment with what success the principle is working. The Act recognizes that reforestation of our vast areas of cut-over land is the outstanding need in providing future forests, and that adequate fire prevention is the master key. To encourage states and private individuals to protect their forests from fire, it authorizes an appropriation by the Government of two and a half million dollars annually. This authorization recognized that ten million dollars a year from all sources is required to provide reasonable protection to our forest land. Three-fourths of this amount represents the obligations of the states and private interests and one-fourth the obligation of the Federal Government. During the current fiscal year Congress and the Bureau of the Budget provided under this agreed program only \$710,000, while state and private agencies responded with expenditures for fire protection of almost \$4,000,000.

"The failure of the Federal Government to measure up to the obligations which it assumed under the Act has challenged the success of the whole undertaking. The fear of a breakdown of the Act and a failure of the cooperative principle which it exemplifies, prompted representatives of private and public interests to appeal directly to the President of the United States last October. It was pointed out to him that the failure of the Federal Government to finance its share of the responsibility in assuring adequate fire protection for forest lands is not only false economy but an evasion of the Act which the people passed for the solution of the most vital forestry problem of the nation. It was further pointed out that the expenditures now being made by state and private agencies under the Act calls for an expenditure of a million and a quarter dollars from the Federal Government.

"I am glad to say that the President and the Bureau of the Budget responded with an increase of \$290,000, bringing the total expenditure by the Federal Government up to \$1,000,000. This is encouraging, but we cannot escape the fact that the Act itself is in danger of failure so long as the Federal Government fails to occupy a position of leadership in its operation and to meet its

full financial responsibilities. It is a mistaken theory of economy to undertake forest fire protection half-heartedly or upon a penny wise and pound foolish basis. The experience of the Federal Government itself has shown that inadequate appropriations for fire prevention too often result in far more expensive outlays to extinguish fires which might have been prevented with a little more money for prevention work. Timely point is given to this assertion by the Deficiency Bill introduced in Congress a few days ago, calling for an appropriation of \$2,155,000 to defray emergency expenses incurred last summer in extinguishing forest fires in the West. Had half this sum been available for forest fire prevention, I have no doubt but that these emergency expenditures would have been avoided, the taxpayers of the country saved a million dollars, and many thousands of acres of timber saved for the people of the United States. My own Association believes that Congress should make available at least one million and a half dollars annually, if it is to be in a position to meet its own assumed obligations in cooperative fire protection and to exercise leadership in a national forest policy which it has initiated as the will of the people.

"Were this the only evidence of the Federal Government's shirking of responsibility under the Clarke-McNary Act, the case would be bad enough, but in another direction Congress has failed properly to finance obligations imposed by the Act. I refer to that section of the law which contemplated an extension of federal acquisition of lands for public forests in the eastern states. The Act enlarged the policy of the old Weeks Law to make possible the purchase of lands for national timber production as well as for the protection of navigable streams. During the years the Act has been in force, however, Congress, responsive to the dictum of the Bureau of the Budget, has steadfastly refused to finance this activity on the enlarged scale contemplated and authorized. The result is a situation which quite properly causes alarm in those states where National Forests have been initiated under the old Weeks Law. The danger here lies in the public and political demand that the small amount of money made available for the work annually be spread over the much greater area coming under the enlarged authority of the Clarke-McNary Act, thereby dissipating the funds available for completing acquisition projects already started.

"Failure of Congress to recognize the enlarged scope of the Clarke-McNary Act prompted The American Forestry Association in December, 1924, to propose a fiscal program for this important work covering a period of ten years. This program was incorporated in what is known as the McNary-Woodruff Bill now pending in Congress. It has been passed by the House with amendments, but is on the Senate Calendar in its original form. In fact, the President said in his recent message to Congress that upon passage of the Act he would consider making another million dollars available for acquisition work during the coming year. Until this section of the

Clarke-McNary Act is financed on a permanent and definite basis Congress cannot escape the charge of trifling with our basic forestry policy.

"I realize that the financial strictures upon the operation of the Clarke-McNary Act are justified in the name of economy. We are all in sympathy with governmental economy, but when economy becomes undiscerning and is carried to a point that threatens to defeat an organic forest law, then American forestry enters upon dangerous ground. The permanence and success of this Act are all important to forestry in the United States. Failure of any one of the three agencies, state, private or federal, and most particularly the last, to do its part, means a setback that will undo much of our forest progress during the past decade. Now, I do not expect this to happen — the friends of conservation are fully alive to the necessity of holding every objective that we have fairly won. The full operation of the Clarke - McNary Act is vital to continued forestry advancement, and it devolves upon us, as good soldiers of the cause, to redouble our efforts to that end.

"Of no less importance to American forestry today is the integrity of our National Forests. These vast public properties, embracing more than 158,000,000 acres dedicated to the growing of forests and the protection of our water supply, represent the greatest conservation achievement of this or any other nation. During the past year we have witnessed a politically maneuvered attack upon these forests by a group of stockmen seeking

special grazing rights and privileges which, if granted, would virtually break down the administration of these lands as public forest properties. To reveal the sinister consequences of these proposals and to turn aside the well-organized attack called for an aggressive defense on the part of our Associations. It is significant that the public protest against the stockmen's proposals compelled the original Stanfield grazing bill to be withdrawn with

almost precipitant haste. During the past summer Secretary of Agriculture Jardine called on a member of the stock industry to make an investigation of the National Forest ranges. A report was submitted which in almost every important detail substantiates the contentions of the Forest Service and of our Association. The report recommends an increase in present grazing fees. It enunciates the economic fact that forage is a commodity whether in private or public ownership, and that its possession by the Government neither alters nor invalidates this principle. It also holds that the creation of the National Forests gave to those who were privileged to graze only security in the enjoy-



PRIZE WINNING FIRE POSTERS

Selected from 165 entries, the poster at the left won first prize for artistic excellence and psychological appeal. The other was adjudged the best from the standpoint of visibility, and both are from Canadian organizations.

ment of their privileges to an extent compatible with the public interest and contingent upon observance of rules governing forest administration. The conviction is stated that it is to the interests of both the stock industry and the administration of the National Forests that the grazing controversy be speedily settled by definite action along the foregoing lines.

"I am informed that certain stockmen in Nevada are

formulating plans to have the National Forests of that state changed to National grazing reserves to be administered by the Department of the Interior, presumably with the idea of obtaining large privileges and grazing fees no greater than the cost of administration. Such a proposal even though restricted to the more or less treeless forests of Nevada, must be considered a threat to the National Forests in all other western states. Once such action is taken in Nevada, it would establish the precedent for similar action with respect to the grazing areas in the National Forests of other states. It requires no gift of prophecy to foresee in this Nevada undertaking the ultimate dismemberment of our whole western National Forest system.

"In opposing these specious proposals of special stock interests, it is perhaps natural that they should charge us with an unfair and unsympathetic attitude toward their industry. Some of the stockmen would have it appear that we are merely sentimentalists who want to banish all stock from the National Forests. Lest the public accept such statements which are given wide circulation, I want to say here and now that we recognize forage as a natural resource of the National Forests to be conserved, developed and utilized under such methods as will best protect other public interests inherent to the forests, and at the same time promote the permanent interests of the stock industry.

"It is unfortunate that we were compelled to witness this past year a lowering of the high standard which we have set for our National Parks. In the first session of the Sixty-ninth Congress legislation was passed providing for three National Parks in the southern Appalachians, contingent on the land's being purchased by the public and donated to the Government. With respect to one of these areas, at least, political expediency was a dominating factor. Congress failed signally to demand a careful determination of whether or not the area conforms to those scenic and scientific standards which distinguish our present National Parks. As the National Parks are such an important part of that immense inheritance which we are trying to do our share toward preserving for future generations, it behooves us to uphold the hands of those who are trying to keep alive the high standard of these parks, by which they will forever remain as places where, as Dr. Merriam says, 'one looks through the veil to meet the realities of nature and of the unfathomable power behind it.'

"The precedent raises a challenge of whether our National Park system shall remain a system of restricted areas comprising the highest and most inspiring shrines of nature or, through political bartering and regional rivalry, shall become an extensive chain of commonplace areas imposed upon the Federal Government for administration as public playgrounds. To me this spells the destruction of the ideals and principles which have made our National Parks the outstanding scenic and

educational institutions of their kind in the world. It assumes that the Federal Government's obligation is to administer at public expense vast playground areas for its people—an obligation I personally do not admit. Carried to its logical conclusions, it would mean a withdrawal of great areas chiefly suitable for forest production from the economic uses of the country, and would burden the people with an increase in taxes that would halt the economic development of federal and state forestry in the United States.

"While touching upon federal land use, I want to stress the importance of conservation as a larger policy in federal stewardship. In the United States, exclusive of Alaska, the Federal Government is the custodian of over 365,000,000 acres. This represents a land area of more than 570,000 square miles, title to which rests in the people of the United States. This land is divided among a score or more of uses and administered by many different bureaus, some of which are following definite conservation policies, but largely unrelated and uncoordinated one with another. Others have no conservation policies or authority. At the head of the list the public domain, outranking any other class of lands in areas, embraces over 184,000,000 acres. They are in a sense a no man's land in that the Government has not seen fit to administer them under any plan of conservation or permanent management. They are being utilized for grazing without charge or control by the Federal Government. The Secretary of the Interior in a recent report stated the gratuitous use of the Public Domain as an unrestricted range for livestock has resulted in overgrazing. Wide areas have been almost denuded of native grasses. In contrast to the Public Domain are the National Forests, almost equal in area, efficiently administered under the Roosevelt policy of conservation. Here is a striking example of how the Federal Government on the one hand is failing to conserve the natural wealth of certain of our lands and on the other hand is wisely and efficiently enriching other areas of public lands. The situation is inconsistent and a reproach upon national economy.

"I believe the time has come in the economic development of our country when we must demand that our Federal Government adopt an all inclusive conservation policy and coordinate its activities into a separate department to be known as the Department of Conservation, or one equally well named. The natural resources owned by the people of the United States are far too valuable and too important to the permanent development of our country to permit any part of them to be dissipated by the traditions of departmental administration.

"But lest I should be thought to believe that all forestry progress has to do with federal activity, let me express the gratification of The American Forestry Association in the progress of private forestry throughout the United States during recent years. More and more

(Continued on page 173)

Uncle Sam Saves the Longhorn from Extinction

By WILL C. BARNES

THE agricultural appropriation bill for the United States Department of Agriculture for the fiscal year 1928 carried the following small and inconspicuous item:

"Provided that not to exceed three thousand dollars of the sum appropriated in this paragraph shall be expended for the purchase and maintenance of a herd of long-horned or Spanish breed of cattle for the Wichita National Forest in Oklahoma to the end that the present comparatively few living examples of this historic breed of cattle may be preserved from complete extinction."

For several years officers of the Forest Service have been endeavoring to secure such an appropriation in the firm belief that a small herd of these cattle should be secured and placed in some enclosure maintained by the federal government where they could be preserved for the benefit and education of future generations of young Americans interested in our pioneer history. With the able assistance of Senator Kendrick of Wyoming the item was finally and successfully put through Congress and the bill carrying it signed by the President on January 17.

The Wichita National Forest and game preserve is an ideal location for these animals. It lies right in the heart of the range of the old southern herd of plains

buffalo, and is surrounded on all sides by the region formerly known as the Indian Territory where now live more than fifty thousand Indians. Here also grazed the forefathers of these long-horned cattle when the livestock industry of the southwest was in its infancy. Around these three, the Indian, the Buffalo and the

Longhorn, is gathered most of the romance, history and adventure of the great plains country and especially the southwest.

There are still a few living members of this once numerous breed of cattle to be found down in what is known as the prickly pear country of Texas. The herd for the Wichita Forest will be selected with every care by men who are familiar with the characteristics of the old timers of the southwestern ranges.

They will be grazed in a pasture immediately adjoining the one occupied by the herd of buffalo now

established on the Wichita, and the men who conceived the idea feel sure they will flourish in their new surroundings. Moreover, they claim it will be a profitable investment for Uncle Sam, for the increase can be sold either for park zoos and such exhibition places or else for its beef value. This insures a permanent market for the surplus animals and an excellent financial return on the investment.

But best of all we shall preserve and maintain these three examples of the early pioneer life of the southwest, where those interested may see them in close proximity one to the other.



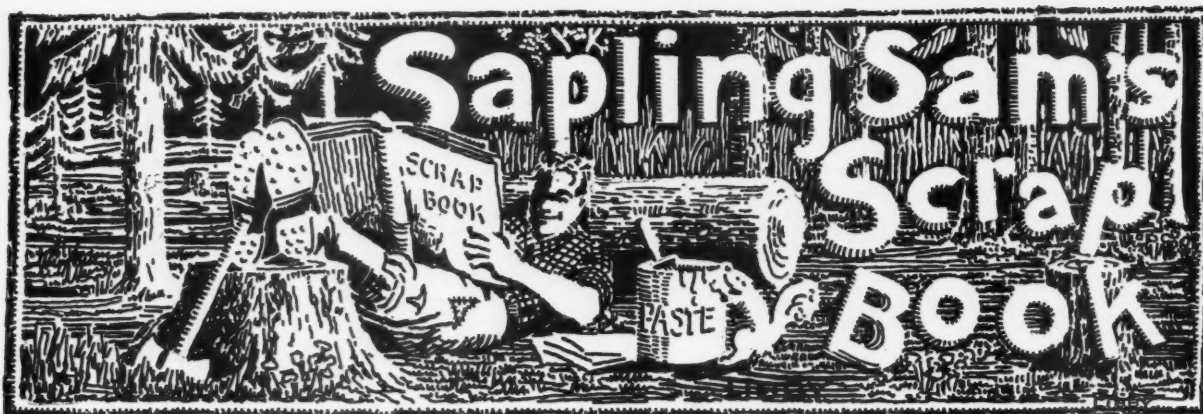
A LONG-HORNED STEER

This old fellow lived and died in the Wichita, and learned to pose for his picture every time he saw a Kodak trained his way.

Plant Evergreens This Spring to Illuminate Next Christmas

PRIZES OFFERED FOR PICTURES OF LIVING CHRISTMAS TREES

In order to obtain more knowledge of the number of growing "Trees of Light" being used in this country,—to find out where the first living community Christmas tree festival took place and if possible get a picture of that tree and also to create more interest in the planting of evergreens to be illuminated at the Yuletide season,—Mrs. Alma Margaret Higgins, of Butte, Montana, announces an offer of \$10.00 for a photograph of the most beautiful growing community Christmas tree submitted. If a picture of the lighted tree cannot be taken, a description of the tree in Christmas garb must accompany the photograph. It is also requested that the size of the tree be given, date of planting if the tree is a transplanted one, and by whom planted. A prize of \$10.00 is also offered for a photograph of a living home Christmas tree, decorated to tell the "Christmas Story." Send photographs to Mrs. Alma Margaret Higgins before February 15th, 1928. (The date of the closing of the contest for pictures of the 1926 Christmas trees has been postponed until April 1st, 1927.)



Speaking of Bears

We have all in our youthful days relied for safety against the onslaught of the imaginary bear by mentally climbing a small tree and firmly believed that we would be entirely safe in such a refuge. But listen to this. Ranger Naylor and Assistant Supervisor Dwire of the Carson National Forest were prowling around the Cow Creek Ranger Station when Laddie Boy, Naylor's Airedale, sent up such a furore that the forest officers decided to investigate and found Laddie Boy had a sizable brown bear treed.

After the excitement of the find subsided, the brilliant idea of capture by the lariat was hatched and Bruin was promptly lassoed, dragged down out of the tree and hog-tied; but not securely enough, as one foot jerked loose, and said bear made a bee line for a certain aspen tree which Rangler Naylor had mentally reserved for his means of escape if needed. Dwire, we are informed, was more cautious and remained on his horse. With this turn of affairs it was decided best to turn Bruin loose so he was again hauled out of the tree, Ranger Naylor severed the rope on his neck and then made tracks across country passing several rabbits en route. The bear meanwhile was just a lap behind, and slowly gaining until Ranger Naylor made an abrupt turn and, greatly to his delight, found the bear kept the original course and, in fact, was not chasing him at all, but was merely on his way home.

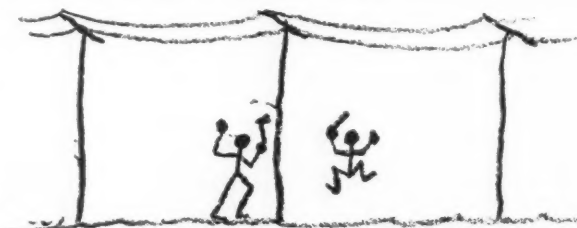
Moral: Bears can climb small trees—and if one is behind you and both of you are going like sixty it does not necessarily mean he is after your goat. He may only be trying to save his own.—*Southwestern Forest Service News-Letter.*

Like This Page, Y' Know

Professor (at quiz): "What causes laughing?"

Freshie: "A laugh is a peculiar contortion of the human countenance, voluntary or involuntary, superinduced by a concatenation of external circumstances, seen or

heard, of a ridiculous, ludicrous, jocose, mirthful, funny, facetious or fanciful nature and accompanied by a cackle, chuckle, chortle, cachinnation, giggle, gurgle, guffaw or roar."—*The Kablegram.*



Woodman, Spare That Pole!

LITTLE ROCK, Ark., January 14.—While Little Rock does not claim rivalry with New York and Chicago in size, a stranger here yesterday found it necessary to blaze his trail through the city with a hand ax to avoid becoming lost.

The woodsman was found by police hacking a marker on each telephone pole he passed. He was told that this was illegal.

"All right," the police were informed, "if you're so particular I'll go back to where I came." And the stranger did, following his trail of marked poles.—AP story in *Washington Star.*



It Can Be Did!

One ducky was telling another about how a turtle got away from an alligator. The alligator was "Jes' ready to snap de turtle wid his big jaws when de turtle woke up and climbed a tree."

"Nigger, you know that turtles can't climb no trees."

"Dat's so brodder, but dat turtle had to climb dat tree."—*Service.*

In the Interests of Accuracy

Note:—30° below this morning—the middle of December. I have already arranged for an 8-inch extension on the lower end of the minimum thermometer to give the alcohol a chance to do its stuff in January and February.—Ranger Mike Guthrie in the (Minnesota) *Smoke Screen.*

Natural History as She Is Known

The following answers are alleged to have been made in a college examination:

—Flora and Fauna are a couple of chorus girls.

—Homer is a type of pigeon.

—A quorum is a place to keep fish.

—*Western Reserve Red Cat.*

Wild Animals I Have Met

"An' what may yon creature be?" the Scotchman asked the keeper.

"That's an American moose," replied the man.

"A moose?" exclaimed the visitor. "Hoots, mon, show me an American rat."—*Tit-Bits.*

Wilderness

It was the Hon. George Bockes, of Otsego County, speaking to the New York State Forestry Association. He told of the back country where there was land, but no money for reforestation. "Why, gentlemen," he said, "some of those people live so far back in the woods that one of them told me his chickens mated with the owls!"

Hear Ye, Hear Ye

It all depends on how you advertise. A grocer found advertising didn't pay, according to the Caldwell (Kansas) Messenger, when he advertised, "Big shipment of apples received. Buy now, for the early bird gets the worm."

The Annual Meeting at New Haven

(Continued from page 170)

lumber companies and timberland owners are giving this serious study and adopting permanent plans of forest management. We cannot escape the fact that with almost three-fourths of our forest land in private ownership the nation must look to these private endeavors for the bulk of its future forest supply. It therefore behooves us as public advocates of forestry and conservation to put our shoulders to those undertakings that will aid private forestry to develop and expand as a successful and economic industry. Adequate forest fire protection which I have already mentioned must be provided, likewise fair systems of taxation. State laws in many instances must be modified in order to give private forestry fair and free play. These are all tasks demanding our best thought and our best effort.

"In all that I have said it may seem that I have stressed the things not yet accomplished, the goals not yet won. And that, I think, is proper for only by facing frankly the obstacles ahead can we hope for intelligent progress.

"Yet not for a single minute am I unmindful of the amazing strides that we are making and have made. Consistently we have built on sound foundations. We have laid our plans with eyes fixed on the distant goal. And today we have but to look about us to see accomplishments that cannot but renew our courage to press on until the last fight is won."

F. W. Luening, of the editorial department of the *Milwaukee Journal*, spoke next on "Public Aspects of State Forestry." Colonel Graves then called upon Charles Lathrop Pack, the well-known educator in forestry and a former president of The American Forestry Association. Dr. Pack made an effective plea for wider and more vigorous support of the association.

Mr. Pratt presided during the afternoon session, which was devoted to the general subject of "Forestry and Industry." Robert B. Goodman, former Chairman of the Committee on Economics, National Lumber Manufacturers Association, spoke on "Where Will the Lumberman Get His Future Supplies?" "The timber owner," said Mr. Goodman in conclusion, "is looking to the forester, whom he formerly mistrusted as an economic enemy, as his economic advisor. You have said in the past that we failed to realize our responsibility. Do you men trained in silviculture and forest industry and forest finance realize, not so much your responsibility as your opportunity, for usefulness? I know that many of you do. The right cooperation between the forester, the public and the private timber owner is necessary to bring about in every region in the shortest time and in the largest measure a balance between forest

growth and forest consumption, a crude forestry in which the costs of planting, fire protection and more extended logging facilities, are well within the measurable value of timber growth. The progress that has been made in the last five years assures us of the future and is in full accord with the recent findings of the National Chamber of Commerce: 'The great bulk of our forests will and should remain in private hands, this being in best accord with our own institutions and also our experience here and abroad.'"

Carlile P. Winslow, Director of the Forest Products Laboratory at Madison, Wisconsin, took as his subject "The Chemical Possibilities in Utilization." Nathaniel M. Rice, Vice-President of the New York, New Haven and Hartford Railroad, spoke on "The Railroad Man's Interest in Forest Conservation" and Grant B. Shipley, president of the Century Wood Preserving Company, the last speaker of the day, addressed the association on "Making Wood Last Longer."

Following the afternoon session, members and guests were given the choice of three inspection trips. One was a trip to the building and collections of the new Yale School of Forestry, the second, an inspection of the collection of the Peabody Museum of Natural History and third, a trip to the New Haven Progress Exhibit which was being held in the city at that time.

A banquet was given that evening in the large auditorium of the Lawn Club at which Mr. Pratt introduced Lieutenant-Governor Brainard who welcomed the assembled foresters to the State of Connecticut. Honorable William A. Bazeley, Conservation Commissioner of Massachusetts, acted as toastmaster. The first speaker of the evening was President Emeritus Arthur T. Hadley of Yale University. Mr. Hadley traced the beginnings of forest education in America and outlined the parts that the Yale Forest School has played in the forest movement. "The numerous schools of forestry" said Mr. Hadley, "which have since been established in the United States have been in large measure influenced by our example and developed by men who had their training here; so that in this field more than in any other at the present moment Yale is strengthening her claim to the proud title 'Mother of Colleges.'"

E. A. Sherman, Associate Forester of the United States Forest Service, spoke optimistically of the future in his talk, "The Sunny Side of Conservation." "The dark side of the picture has been oversold" said Mr. Sherman. "I want to urge upon you that henceforth we preach the gospel of new and better forests, the resurrection of the landscape beautiful arising from the ashes of the landscape desolated,

the economic salvation of industries permanently blessing a permanent population."

The last speaker was Honorable Fred-eric C. Walcott, Chairman of the Connecticut Commission of Forests and Wild Life, who spoke on "The Conservation of Wild Life and Waste Land," and illustrated his talk by a number of excellent moving pictures.

Saturday morning was given over to a discussion of New England forestry and was a joint session with the forest fire wardens of Connecticut. Among the speakers were Forrest H. Colby, former Forest Commissioner of Maine; John S. Lawrence, President of the New England Conference; Albert M. Turner, Field Secretary, Connecticut State Park and Forest Commission, and Dr. Charles F. Marvin, Chief of the United States Weather Bureau.

One of the most interesting innovations of the joint meeting was a collection of one hundred and sixty-five forest fire posters which had been on exhibit in the large auditorium of the Lawn Club. These posters were the work of seventeen states, Federal Forest and Park Services, Canadian organizations and various protective associations. They were written in English, French, Japanese and even Cree Indian. A committee had been selected to choose the best posters, the committee consisting of R. C. Bryant of the Yale School of Forestry; Baucel La Farge, artist, and J. F. Ferguson, Secretary of the New Haven Chamber of Commerce. Awards were to be made from the standpoint of artistic excellence, psychological appeal and good visibility. The poster submitted by the Province of Quebec was awarded first place both from the artistic and psychological standpoint. This poster carried a direct appeal to the emotions and brought home to the individual more clearly than any printed word could the disastrous result of forest fires. The first prize for visibility was awarded to a poster submitted by the Forest Department of the Province of Ontario, Canada. Because of the careful selection of the color of the background and the type, this poster was more legible from all angles of vision than any other sign.

Saturday afternoon was given over to Forests and Wild Life and was a joint session with the Connecticut Botanical Society. Dr. Alfred F. Hill, Instructor in Botany, Yale University, spoke on "A Rational Wild Plant Conservation Program" and Dr. Charles C. Adams, Director of the New York State Museum, on "The Importance and Methods of Preserving Wilderness Conditions." Will C. Barnes, Assistant Forester of the United States Forest Service, was the last speak-

er and took as his subject "The Romance of the Grass Lands."

The Committee on Resolutions consisted of George W. Sisson, New York, Chairman; F. W. Luening, Wisconsin; Philip Ayres, New Hampshire; James W. Toumey, Connecticut; Barrington Moore, New York; F. L. Dole, Illinois; Harris A. Reynolds, Massachusetts; Austin F. Hawes, Connecticut and Harold S. Ryerson, California. Mr. Sisson, the Chairman, at the request of the presiding officer read a number of resolutions which were unanimously adopted. They included the following:

Resolved that since forest fire is the largest immediate forest problem in the United States, and recognizing that the Clarke-McNary Act passed by Congress in 1924 is the machinery by which the solution of this problem must be accomplished, an adequate annual appropriation should be made available under this Act for forest fire cooperation, to the end that the Government may meet its full obligations, recognize outstanding efforts by cooperating states, and in general, take that leadership essential to the success of the Act and the solution of the forest fire problem.

We hold that any legislation seeking to establish by statute the legality of grazing on the National Forests should

retain in the Secretary of Agriculture, broad administrative authority and should not attempt to enumerate the details of administrative action.

The withdrawal by the War Department of airplanes for the use of the Forest Service in summer forest fire reconnaissance, leaves this service seriously handicapped in this highly necessary activity.

We urge therefore that this service be restored to the Forest Service or that Congress provide sufficient planes for this work.

The present policy of Congress by which insufficient funds are provided for prevention of fires on National Forests, while unlimited expenditures for suppression after fires are started are authorized, is economically unsound.

Therefore Be It Resolved that larger appropriations be made for education, patrol and the application of other known methods of forest fire prevention, and that greater emphasis be placed on fire prevention without lowering the standards of suppression.

Whereas the State of Connecticut has developed an admirable form of organization for dealing with the complex

questions concerning forests, parks and wild life management within the state.

Therefore Be It Resolved that the American and Connecticut Forestry Associations in joint session highly commend this form of organization.

Whereas many local neighborhoods are making persistent efforts to force into the National Park System inferior areas to the inevitable lowering of the System's standards, therefore The American Forestry Association earnestly protests to the President of the United States and to Congress against (1) any lowering whatever of the standards of the National Parks System, (2) any attempt to introduce sectional standards of lower quality and (3) any Congressional or Administrative Act having these tendencies; and, further, that it appeals to the people of the country to demand of Congress laws which shall define and safeguard the National Parks System in its historic conception.

We hold the principle that the acquisition of forest lands by public agencies should consider the quality of land and the timber thereon and its value for water conservation as well as the extent in acres. As an example we hold that the immediate acquisition of the Waterville area in the White Mountain National Forest is highly desirable.

FINANCIAL STATEMENT

The year 1926 closed with the Association in good standing financially. A summary of the year's operations as audited by Rankin and Company, of New York, is printed below for the information of the members of the Association.

THE AMERICAN FORESTRY ASSOCIATION

WASHINGTON, D. C.

Balance Sheet as at December 31, 1926

ASSETS		LIABILITIES AND CAPITAL	
Cash:		Accounts Payable	\$6,306.01
General Funds	\$4,619.16	Reserves:	
Special Funds	9,930.76	Prepaid Memberships	\$21,650.95
Petty Cash	10.00	Permanent Funds	15,335.00
	\$14,559.94	Special Projects	2,237.70
			\$39,223.65
Investments:		Surplus:	
Life Memberships	\$28,119.77	Balance January 1, 1926	\$25,300.37
Permanent Funds	14,600.00	Deduct:	
General Funds	8,648.98	Permanent Funds Expense Charged Off	543.84
	\$51,368.75		\$24,756.53
Interest Accrued on Investments	1,175.23	Add:	
Accounts and Notes Receivable	4,011.18	Adjustment of Accrued Interest	\$813.40
Inventories	8,267.07	Old Outstanding Checks Charged Off	10.50
Furniture and Fixtures	3,794.95	Net Surplus for the Year ended December 31, 1926	12,379.00
Deferred Charges	311.97		
	\$83,489.09	Balance January 1, 1927	37,959.43
			\$83,489.09

Income and Expense Account for Year Ended December 31, 1926

EXPENSE		INCOME	
Magazine	\$32,406.43	Membership Dues	\$70,693.59
Salaries, Office Expenses, Supplies, etc.	37,153.73	Miscellaneous Magazine Sales	768.25
Membership Solicitation	8,937.01	Advertising (Net)	13,652.72
Publicity	2,153.27	Interest, exclusive of interest on Life Memberships	1,724.98
Annual Meeting	962.47	Bequests and Donations	3,715.54
Forester's Office	7,642.81	Forester's Fund	4,859.19
Special Projects	10,543.26	Special Projects	10,161.76
Miscellaneous	436.74	Miscellaneous	1,038.69
Surplus for the year	12,379.00		
	\$112,614.72		\$112,614.72



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What do you know about the costs of your crating lumber?

Get the facts. Perhaps they will show up a serious cost leak. Many concerns report savings of thousands of dollars by switching to light-weight crating woods.

You can soon find out the facts if you will bring these four men together:

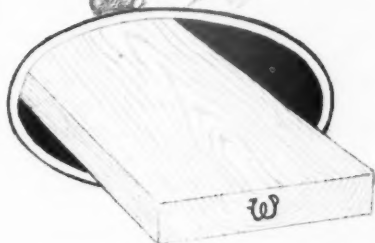
Your Purchasing Agent. He has current lumber prices at his finger tips. And he is pretty sure to be a good judge of lumber.

Your Traffic Manager. He will furnish rates and data on outgoing shipments—very necessary in arriving at final costs of crating lumber.

Your Packing Foreman. He knows how various woods perform under the hammer and saw. And he can point out the wastes due to heavy woods that are hard to work and split easily when nailed.

The Weyerhaeuser Man. He has been present at many such sessions. He knows crating and crating lumber. He has at his finger tips the necessary information to help your men arrive at an impartial decision. He doesn't want your business if you cannot be served efficiently by the Weyerhaeuser Organization.

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Weyerhaeuser Crating Woods

A continuous dependable supply of 8 light-weight woods—one to fit each packing need. Abundant strength—easy working—nail without splitting.

Cut-to-size Crating for Standardized Crates

If you can standardize your crates, you will save additional money with Weyerhaeuser cut-to-size crating lumber—bundled, ready to nail up. No freight on waste. No costs for cutting. Less storage space. Rapid packing.

Weyerhaeuser Light-weight Crating Woods

Choice of 8 kinds - Light but strong - Work easily - Nail without splitting

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Weyerhaeuser Forest Products are distributed through the established trade channels by the Weyerhaeuser Sales Company, Spokane, Washington, with branch offices at 806 Plymouth Bldg., Minneapolis; 208 So. La Salle St., Chicago; 2563 Franklin Ave., St. Paul; 1600 Arch St., Philadelphia; 285 Madison Ave., New York; 812 Lexington Bldg., Baltimore; Portsmouth, Rhode Island; 2401 First National Bank Bldg., Pittsburgh; 1313 Second National Bank Bldg., Toledo.

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AROUND THE STATES

WITH

THE AMERICAN FORESTRY ASSOCIATION



Fire Protection For Dismal Swamp

Owners of land in the Dismal Swamp region, located in Virginia and North Carolina, have asked the two states to draw up a plan for protection of their property from fire, for submission with costs, at a joint conference.

An inspection of this area has been made by the Forest Service of both states, and plans mapped out for the location of fire towers, telephone service, fire crews and equipment. This will include estimates for a twelve months period.

New Wild Life Refuge in Louisiana

A tract of 81,000 acres in Madison parish, Louisiana, owned by the Singer Manufacturing Company, is the first state wild life refuge to be established on leased lands. The lease to the state covers a period of ten years, the consideration being certain protection by the state against fire.

The lands included in this tract are inhabited by wild turkey, deer, bear and other upland game. The forest growth is mostly hardwood timber, either virgin or second growth.

This Singer Refuge is to be in charge of two resident wardens, in addition to two timber wardens employed by the company. No person will be allowed to take on the property any fire-arms, traps, snares or other devices for capturing wild animals. The boundaries will be posted and the public warned against trespassing by signs placed at all entrances.

California Park Bills Introduced

Three state park bills are before the Assembly at this session in California. Senate bill 440 would authorize the

present State Park Commission to make a survey determining lands suitable for ultimate development of a state park system and to define the relation of such a system to the conserving and utilizing of the scenic and recreational resources of the State. An appropriation of \$25,000 would be made for the survey and

Governor Young, Chairman California Forest Week Committee

American Forest Week in California will gain unusual momentum this year from the acceptance by Governor C. C. Young of the Chairmanship of the State Committee. Forestry and water conservation were important issues in Governor Young's campaign and his continued and aggressive interest means much to the Golden State. Mr. Young is the first Governor to accept such a position in the history of the American Forest Week movement.

the Board is authorized to accept gifts and bequests for the same purpose.

Senate bill 441 would authorize a state bond issue of \$6,000,000 for the purchase of lands for state parks, would create a state park finance board of ex-officio members, would make possible the use of money only when matched by funds secured from some other source than the public funds of the State of California. The act cannot take effect until an amendment to the constitution is voted on by the people.

Senate bill 439 would create a new

state park commission, charge it with the duties of defining and managing a state park system, employing a state park director, accepting gifts, grants and donations for the development of the park system, making rules for the protection of park areas and prescribing fines for the violation of such rules, creating a contingent fund made up of gifts and bequests and a revolving fund to be made up of gifts and appropriations. The bill appropriates \$25,000 for the work.

No hearing has been held or vote taken on any of the three bills so far.

Southern Forestry Congress Meets This Month

The Southern Forestry Congress will hold its Ninth Annual Meeting at Jacksonville, Florida, on March 22 and 23.

Interesting and instructive addresses by lumbermen, naval stores operators, State and Federal forestry officers have been arranged for the program. The Florida forestry situation and the state's need for forestry legislation will be thoroughly discussed. It is expected that the Florida legislature, which meets in April, will consider the enactment of a state forestry law.

H. L. Kayton of the Carson Naval Stores Company, Savannah, Georgia, is President of the Congress and E. O. Siecke, College Station, Texas, is Secretary-Treasurer. W. D. Tyler of the Clinchfield Coal Corporation, Dante, Virginia, is Chairman of the Executive Committee.

Reforestation in Indiana Grows

The Forestry Division of the Indiana Department of Conservation reports a steady increase in the demand for forest seedlings. The state nursery output has

risen since 1922 from 13,000 seedlings to an estimated output this spring of 200,000 trees. A new nursery site has been developed in which a million trees will be available by 1930.

West Virginia Commission Recommends Changes

Continuous development of the forest fire control program under its present administrative controls is one of the recommendations made in its recent report by the Forest, Parks and Conservation Commission of West Virginia to the Governor and Legislature.

The commission also suggested that an amendment be submitted to grant authority to the legislature to direct the Game and Fish Commission, with the Governor's consent, to administer as Forest, Game and Fish reserves all forfeited and unredeemed lands suitable for such purposes.

Another recommendation was that the title of the present Game and Fish Commission be changed to Conservation Commission.

Public Lands Committee Probes Oregon Timber Deal

Under a resolution agreed to on January 31, the Senate Committee on Public Lands and Surveys has investigated charges of irregularity and apparent fraud in the sale of certain timber in Oregon, by the Forest Service to Fred Herrick. The contract provided for the building of a number of miles of common carrier railroad to get the timber which is located on the Malheur National Forest, to the market. Impatience on the part of the people of Grant County, Oregon, at the delay in the project and at the time extensions granted by the Forest Service led up to the investigation.

The first hearings were held on February 11, and the committee was charged to make its report by February 28. A large number of witnesses, among whom was an unsuccessful bidder for the timber, active in bringing about the investigation, had been subpoenaed. Results of the investigation were not available at the time of going to press.

Few Fires In Connecticut

The State of Connecticut points with pride to the fact that the last fall fire season only recorded ten forest fires—two of which could hardly be termed real fires. Of the eight "real" fires, two were caused by railroads, one was of incendiary origin, one caused by brush burning, two of unknown origin, and one was started from a camp fire. In the latter fire the boys who were responsible paid the expenses of extinguishing it.

The total area burned was 23½ acres and the total estimated damage was \$140—a splendid record. Very heavy rains in the State have prevented more serious fires.



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IN England pruning is the great outdoor sport. Americans are learning the pleasure of this sport and are reaping the profit.

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BECAUSE: The long pole is sectional if you wish it—the light aluminum, quick-change sleeve connection is as strong as or stronger than the pole itself. It can also be furnished in one piece 8 to 16 feet long.

BECAUSE: The new rope pull gives a fine leverage and saves lots of labor.

BECAUSE: Insulation is provided on our No. 1 Trimmer for pruning among live electric wires. This is optional.

BECAUSE: The pole saw implement makes cutting easier than with an ordinary hand saw.

BECAUSE: The saw is ground for clearance to prevent binding and catching.

BECAUSE: The two-handed, short-handled pruner is built right, with the blade on the opposite side from the general custom. Your right hand operates the blade. The left hand hook remains stationary and cannot injure the tree.

BECAUSE: Bartlett tools are drop-forged with crucible tool steel blades.

No. 1—BAKELITE INSULATED TREE TRIMMER, with 12-foot pole, rope pull (Deduct \$2.75 if insulator is not wanted) \$10.40

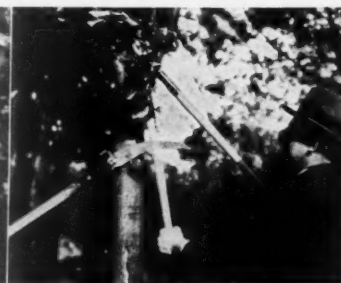
No. 4—POLE PRUNING SAW with 12-foot pole 5.00

Extra 4-foot section with aluminum sleeve for lengthening pole, fits either No. 1 or No. 4 2.20

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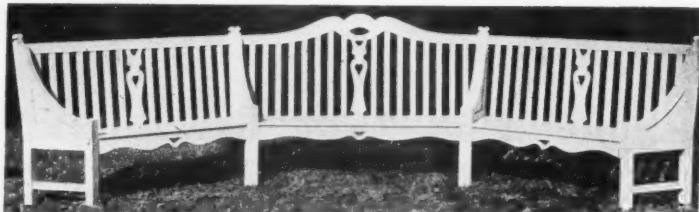
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Paul G. Redington Heads Biological Survey

Paul G. Redington, Assistant Forester in charge of the branch of Public Relations and for many years District Forester of California, became on February 16, the new Chief of the Biological Survey.

Dr. E. W. Nelson, who since 1916 has been Chief of the Survey and for over 35 years a member of the Department of Agriculture, will hereafter devote his time to research activities and to compiling the vast amount of material that he has gathered together during the 50 years in which he has been a close student of wild life.

Mr. Redington's years of service as District Forester and Assistant Forester have made him nationally known among scientists and conservationists of the country. He will be succeeded by Major R. Y. Stuart, former Secretary of the Department of Forests and Waters in the State of Pennsylvania and present President of the Society of American Foresters.

Mr. Redington took office as Chief of the Biological Survey on February 16, and Walter C. Henderson, formerly Assistant Chief of the Biological Survey, was appointed Associate Chief. Mr. Henderson has held important positions in the Forest Service and in the office of the Solicitor of the Department of Agriculture. He has been connected with the Biological Survey for the past ten years.

Ohio's State Forests

It is apparent that Ohio's policy of acquiring state forests is well established. Funds for acquisition have been provided consistently by the legislature for several bienniums.

During the past year 14,090 acres have been added to the six state forests. One new unit was established during the year. In addition some 3,000 acres are under option, and will soon be taken over. The total acreage of state forests in Ohio is now over 33,000 acres.

A large proportion of the land acquired is stocked with second growth hardwoods and pine. The average cost including some 500 acres of higher priced forest park land was \$6.60 per acre.

Bright Angel Claims Voided

The Department of the Interior has declared void the 28 claims filed with the Department by Senator Ralph Cameron and others, covering placer mining locations in the Grand Canyon National Park of Arizona. These claims were adjacent to some of the principal scenic features of the park, close to the suspension bridge and the Bright Angel trail.

An appeal had been asked on the ruling of the commissioner of the General Land Office which declared the claims voided, but the decision upheld this ruling. The department said that testimony in the case "convincingly shows that these claims have been laid over lands and upon geological formation entirely barren of valuable and mineral deposits, exhibiting no conditions favorable to mineral deposition." They were said to constitute a continuing trespass and public nuisance.

Missouri State Forester Publishes Annual Report

In his annual report to the Governor and Legislature of Missouri, State Forester Frederick Dunlap stresses the attention given to the study of wildfire in Missouri, the damage it has done and practical measures suggested for reduction of losses. Fire protection is now being secured through the cooperation of interested timberland owners and local communities.

The Department of Forestry also aided the State Park Board to devise and help put into operation a system for furnishing the highest type of protection from wildfire to the larger State Parks. A double system of fire lines is being cleared and two steel watchtowers are being built.

During 1926, 70,000 seedling trees have been planted in the agricultural counties of Missouri for timber production. The State Forester directed most of these plantings.

A State Forest Nursery has been established in Cedar City, on the State Prison Farm. Seeds of various hardwood trees have been gathered this past fall and will be sowed in the spring to produce trees ready for planting a year later.

Because forest planting is an untried venture in most parts of the State, it will not become as general a practice as it should be until it is possible to have successful plantings available within reasonable driving distance of every farmer. In order to encourage the planting of such models the Department of Forestry guaranteed the success of all plantings made under its supervision during the past year. The farmer was required to purchase plants as directed and put them in the ground as instructed. All trees that fail to live are then replaced free of charge by the Department. It was recommended that this plan be continued

until there is a successful forest plantation in each county in the State.

It is hoped that the Legislature will appropriate money to continue the work of the Forestry Department, and that the chances for considerable expansion of activities are reasonable. Little importance is placed in a bill introduced to abolish the Department of Forestry.

Private Citizen Pinchot Still in the Fight

Gifford Pinchot, ex-Governor of Pennsylvania and former Chief Forester of the United States, has again taken up his home in Washington, D. C. and will devote his time to furthering the interests of conservation.

Mr. Pinchot is particularly interested in farm relief, Southern industrial development and conservation of national resources. He will make a special fight for the best development of the Muscle Shoals project. He believes that proper development and distribution of the power will place the South on its feet.

Ex-Governor Pinchot's name has always been synonymous with the development of forestry in the United States and his friends will welcome his activities at Washington.

Indiana Buys Virgin Forest

An area of 100 acres is being purchased adjoining the state forest in Clark County which includes about thirty acres of virgin white oak timber. The area has been cruised by the state forester and found to contain the purchase price worth of merchantable timber. Individual oak trees are nearly three feet in diameter and scale over a thousand board feet apiece.

This is the only remaining virgin stand of the kind in southern Indiana. It will be preserved to future generations as a type of the magnificent forests which once covered the state.

The state division of forestry announces the sale of 170,000 seedling trees from the state forest nursery at Henryville.

More have been sold already for spring delivery than the total of any previous year.

The available supply is nearly exhausted. Arrangements are being made to secure additional trees in Pennsylvania and Vermont to supply the Indiana demand in order not to hinder the reforestation program of the state.

A great many farmers are taking advantage of the forest tax exemption law. They are using the tax savings to improve their woods by cleaning out the undesirable species and reinforcing the open places with the better kinds of trees as oak, poplar, and black walnut. In many cases the idle clear land is included for classification and is reforested with plantings. The pines are advocated for poor soils. Our native hardwoods are favored wherever possible.

Kentucky Has 100,000 Trees For Reforesting

Finding that their last spring's supply of 12,000 trees available for reforestation use was insufficient to meet the demand, the Kentucky Forest Service at Frankfort increased the number to 100,000 this year. These seedlings are in splendid condition for planting up idle land. They will be sold at about \$6 per thousand and the species available are locust, oaks and catalpa.

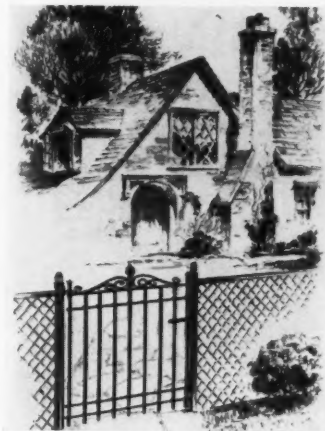
For those desiring trees for planting along highways and on public grounds, nearly 6,000 ash, sycamore and maple trees, from 4 to 6 feet tall, are ready in the nursery. These have been transplanted once which will assure a root system well adapted to transplanting. The trees will be sold for 10 cents each, to cover cost of digging and packing.

Show-Window Forest is Gift of Charles Lathrop Pack

Through a donation made by the Charles Lathrop Pack Forestry Trust, Syracuse University is the recipient of a demonstration forest which is the largest one of its kind in the United States. The tract is situated in the Lake George section of the Adirondacks, on the main highway between New York and Montreal. It contains some of the finest specimens of virgin white pine remaining in the East.

Mr. Pack's purpose in making this gift was to establish what might be known as a "show-window forest" because of its situation on a main highway. It will comprise a model forest in all phases of its development, becoming a source of public education as well as a demonstration area under scientific forestry management.

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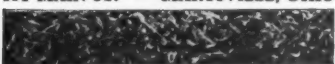
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Allegheny Section Holds Meeting

The annual meeting of the Allegheny Section, of the Society of American Foresters, was held in Philadelphia, Pennsylvania, in conjunction with the annual meeting of the Society. A total of 48 members of the Allegheny Section were present at one or more of the sessions of the Society meeting. The business meeting was held at the Hotel Pennsylvania on Thursday noon following a lunch in the main dining room at which over 40 attended. Only routine business was undertaken as the members present all desired to participate in the discussions of the Society. The summer trip of the Section will be held sometime between July 15th and 30th and will cover the forestry operations in the anthracite coal regions of Pennsylvania.

The Section elected the following officers for 1927: Chairman, F. W. Besley; Vice-Chairman, J. H. Preston; Secretary-Treasurer, H. F. Round.

Forest Fire Losses Heavy In South

Nine southern States suffered a loss of \$18,000,000 from forest fires in 1925 which burned over 22,000,000 acres of forest lands. These figures are taken from a report made by the Forest Service after an analysis was made by the Southern Forest Experiment Station at New Orleans from estimates collected by the State foresters. This loss figure represents 64 per cent of the total loss from forest fires in the United States.

Although the area burned over constitutes 84 per cent of the total area swept by fire in the United States, forest officers point to a decrease of 35 per cent over the 1924 loss. This advantage is partly due to more favorable fire weather, and partly to more efficient fire fighting organizations of private landowners and State forestry departments.

Of the total loss of \$18,000,000, eighty-nine per cent represents the estimated damage to forest tree growth. The difference in methods used in the various southern States of estimating fire damage

made it impracticable to distinguish between the loss to merchantable timber and to immature trees. It was also impossible to estimate the proportion of the fire-killed timber which may have been salvaged following the 46,382 fires in the South.

E. L. Demmon of the Southern Forest Experiment Station, who analyzed the estimate, points to the effect of the loss on the general public. "The huge money value of the timber burned each year by forest fires in the South should make clear the importance of fire prevention," declares Mr. Demmon. "Private timberland owners suffer the greater loss but ultimately it is paid for by the general public. The fact that the loss in the South in 1925 was twice as great as that of all the remaining States combined, warrants the consideration of all who are interested in the conservation of one of the South's greatest assets."

Tree Breeding Station Wants Pine Pollen

The work of the Eddy Tree Breeding Station at Placerville, California, will be concentrated for the next few months upon the pollination of various species of pines. It is a well recognized fact that hybrid plants often exhibit a vigor of growth that is far greater than that of either parent. It is planned, therefore, to try crossing different species of pines with the hope of securing new forms possessing "hybrid vigor." Another object in this work is that of combining, in one new form, desirable characteristics now occurring in different species of pines.

The experiments are to be carried on largely upon pine trees growing in the vicinity of Placerville, California, but it is planned to use pollen from pines in various parts of the United States, and even in foreign countries. The Station will greatly appreciate a little assistance from those interested in the work, in the matter of securing pollen of species of pines that do not occur near Placerville. The only species to be found locally are W. Yellow pine, Jeffrey pine, Digger pine, Sugar pine, W. White pine and Knobcone pine. Anyone who may be able to supply a little pollen of any other pine will confer a favor by letting us know what species they have. We will send them a special vial for shipping the pollen to retain its life. It seems probable, that in addition to the species native to other parts of the United States, (from any of which the station will be glad to receive pollen), there are also occasional rather rare foreign species growing in parks and gardens. These will be of special interest to us, if they can be brought to our attention by those who know about them. Address Lloyd Austin, Eddy Tree Breeding Station, Placerville, California.

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New York Forestry Association Prosperous

The spirit of courage and progress marked the fifteenth annual meeting of the New York State Forestry Association in Albany, February 1.

Prompt response was made to the address of Assemblyman C. L. Fisher on forestry legislation that all groups should support. Resolutions were adopted urging the Assembly to raise the legal rate of pay for fire fighters to a point where it might compete with other needs for labor in times of emergency. Another resolution called for passage of an amendment to the constitution which would remove all doubt as to the Governor's authority to make available a special \$100,000 fund in case of forest fire emergency. This is now authorized by law but has been questioned as unconstitutional.

The meeting was touched with sadness over the untimely death of Clifford R. Pettis who, aside from his splendid work as State Superintendent of Forests, had for many years served faithfully on the Executive Committee of the Association. Resolutions of appreciation and sympathy were adopted.

At the morning session in the City Hall the speakers included Shirley W. Allen of The American Forestry Association who discussed forestry and its relation to wild animal life, and Hon. George Bockes who told of Otsego County's reforestation plan.

The evening session was held in Chancellor's Hall, State Education Building, and addressed by President John D. Clarke, Senator Wm. T. Byrne of the New York State Assembly, Nelson C. Brown of the State College of Forestry and Dr. H. D. House, State Botanist. A feature of the evening meeting was the community singing of "De Woods of Pine." This was led by Secretary J. R. Simmons.

Forestry Students To Visit European Forests

The fourth annual tour of students from the Pennsylvania State and other Forest Schools through the continental forests of Europe will be conducted by Dr. C. A. Schenck now teaching at the School of Forestry, University of Montana. Students from all forest schools as well as graduate foresters or lumbermen are invited to join the party up to a limit of 25 men.

The party will sail from New York on April 7 for Rotterdam, returning in June.

The trip will cover reforestation work of Holland, the old, well-managed forests along the Rhine, Saxony and Prussia, as well as the progressively managed forests of Switzerland and France.

Men interested in this trip should communicate with either Dr. E. A. Ziegler, Pennsylvania State Forest School at Mont Alto, or Dr. C. A. Schenck at Missoula, Montana.



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Kankakee, Illinois

The John Davey Memorial Tree

THE third anniversary of the planting of the John Davey memorial tree will be observed at Kent, Ohio, March 8. The tree commemorates the name of the father of tree surgery.

It is a pin oak, John Davey's favorite tree. He liked it because its trunk grows as straight, almost, as a steel shaft, with never a crotch to mar its symmetry. Its branches grow out nearly at right angle to the trunk, the longest at the bottom so that the mature tree is pyramidal in ap-



THE JOHN DAVEY MEMORIAL TREE
PLANTED THREE YEARS AGO AT
KENT, OHIO

pearance. Its finely pointed, delicately etched leaves are a delight to the eye.

Not long after John Davey's death, a living memorial was selected as the most appropriate way of expressing the affection that his business associates had for him.

And so the following spring a sapling was planted in the grounds of Roosevelt High School. The site is close to the home where John Davey lived in his later years. His son, Congressman Martin L. Davey, turned the last shovel of earth at a spot which is becoming a shrine for those who seek to do honor to a great naturalist.

The tree is protected from trespassers by an ornamented wrought iron fence. Its story is told by a bronze plate suspended from the grill work.

John Davey, born in England at a time when public schools were unknown, did not learn his A B C's until he was 21. He taught himself with the aid of a testament and a dictionary. By a stern process of

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study he acquired a liberal education and in his fifties he brought to fruition the research of 30 years by giving to the world the new science of tree surgery.

New Hampshire Considers New Forest Laws

Among the forest laws before the New Hampshire Assembly for consideration this year is a bill providing for the exemption from taxation of all forest growth under 8 inches in diameter, and to investigate the effect of such exemption on the taxation of other property. It is generally thought that the latter provision will be favorably acted upon.

Another bill would provide for a state forest improvement fund out of the revenue from rentals and sales of products. The present law requires all such revenues to be turned into the general treasury.

Responsibility for brush burning and camp fires would be placed definitely upon the shoulders of those starting them if another special bill is successful. Individuals would be made liable to the towns for the payment of the cost of extinguishing any forest fires from these causes. There is also a section giving the state forester discretion in working out rules and regulations to cover the issuance and use of fire permits and to determine the rights of the public and individuals in the use of camping and cooking fires.

No action has been taken so far.

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In the forest everywhere;
They are only little creatures,
Small, wee, tiny, feeble folks
But I tell you, they are planting
Walnuts, hickories and oaks.

When the shagbark leaves turn golden
And the oaks with frost are browned
Every squirrel in the forest
Starts to cultivate the ground;
Nuts and acorns they are bringing
From the places where they drop,
Some they store for winter dinners,
Some they're planting for a crop.

I have often heard them scolding
When I'm walking in the wood
And I think it not improper,
But like humans that they should,
For I would not like it either
If some giant I should meet
Trampling down my pretty garden
With his clumsy, awkward feet.

Not a footprint, nor a shadow
Of these cunning little folks
Will I mar when I am working
Where they live among the oaks;
I'll not grudge them natty blouses
Nor disturb them in their beds
With their dainty little nightcaps
Tucked about their pretty heads.

I'll just snap them with my kodak,
I'll not harm their pretty skin,
I will leave them hale and hearty
Full of life and joy within,
I'll not ask the cook to serve them,
I'll not thrust them in a cage,
But I'll wish them peace and plenty
And a happy, good old age.

As I love the trees and forests
I will love the planters, too;
I will take their part and praise them
For the splendid work they do;—
They are only little creatures,
Small, wee, tiny, feeble folks,
But I tell you they are planting
Walnuts, hickories and oaks.

Leander Goetz.

Japanese Beetle Invades Pennsylvania

The Japanese beetle, first found in New Jersey, in 1916, has invaded Pennsylvania and now occurs in all of Philadelphia, parts of Berks, Montgomery, Chester and Delaware counties, according to LeRoy Frontz in the "Service Letter" of the Pennsylvania Department of Forests and Waters. This insect's average outward spread from the center of introduction has been from 5 to 15 miles yearly.

More than 200 different species of plants are known to be attacked to varying degrees by the beetle. Many of our common shade and forest trees are listed among these. Some trees that are entirely defoliated are linden, elm, horse-chestnut, willow, sassafras, white oak and chestnut.

The beetles are able to procure food from most of our forest and shade trees, but they show a preference for light which leads them to seek more open and brilliantly illuminated areas. This fact makes it more likely that the beetles will occur more in the open than in the forested regions, thus protecting to some extent the forest trees from this insect.

Southwest Stages Regional Park Conference

The most important outcome of the Regional State Parks Conference for the southwestern states was a resolution urging upon the legislatures of Texas, Kansas, Arkansas, Mississippi, Louisiana, New Mexico and Oklahoma the adoption of definite measures for the acquisition and development of more state forests and state parks.

Another interesting result was the working out of a plan for a "Points of Interest" map of the southwest.

Gabe Parker of Muskogee, Oklahoma, was elected president of the organization and Wm. R. Kavanaugh also of Muskogee was re-elected Secretary.

Pan-Pacific Conference For Hawaii

Announcement is made of the Pan-Pacific Conference on Education, Rehabilitation, Reclamation, and Recreation, called by President Coolidge in conformity with a Joint Resolution of Congress, to be held in Honolulu, Hawaii, during the week of April 11 to 16. Secretary of Interior Work is in charge of organizing and conducting this Conference. Stephen T. Mather, Director of the National Park Service, will have charge of the section on Recreation.

The purposes of the conference are to establish a basis of cooperation for the promotion of peaceful arts and pursuits among the countries participating; to provide a medium for exchange of knowledge on the subjects under discussion; to afford a wider field of service for certain technical activities, and to be of assistance to the territories of the several participating countries.

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Hemlock. 3 to 5 ft. 25 for \$4.00, per 100 \$15.00.
Roots packed in wet sheet moss and burlapped.

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BOOK REVIEWS

GARDEN BOOKS, OLD AND NEW, compiled by Mary Evans. Published by the Pennsylvania Horticultural Society.

This is an excellent compilation of selected books on gardening which will be welcomed by garden lovers. Heretofore the difficulty has been to find just the volumes wanted without examining miles of library shelves, numerous publishers' catalogues, and confusing card indexes. The books listed are comparatively modern and cover a variety of subjects of interest to the confirmed gardener and the newcomer in the field. Miss Evans has made her own comments on a number of books which will prove helpful and suggestive of desirable material. The volume has been published by the Pennsylvania Horticultural Society, and requests for it may be sent them at Harrisburg, Pennsylvania.

G. I. N.

CHILDREN OF GRIZZLY, by Sadye Madalene Hageman, in collaboration with Alfred Oswald Shedd. Published by the World Book Co., New York and Chicago. Price, \$1.00.

This is the story of two Indian children who come to live on Edevo-bah Rancheria in Northern California and attend the local school. From their new home they can see Mt. Shasta, "the Wigwam of the Great Spirit," and they have learned the legends of this Great Spirit, the land He created, and the race known as the "children of Grizzly" that came into being.

The story of the book itself is entertaining, but more outstanding is the ingenious and stimulating manner in which are presented vital health facts regarding proper ways of eating, sleeping, playing and living. Pupils just beginning the study of health will quickly grasp the fundamental rules in the stories told by "Teach-ah," "Chief Braveheart," and other characters in the book. Each chapter is a lesson, but so carefully taught that the "teaching" element cannot possibly detract from a child's enjoyment of the story itself.

G. I. N.

Nature Almanac Published

"A Nature Almanac for 1927" is the name of a new booklet by Dr. William G. Vinal, published by the Playground and Recreation Association of America, containing much interesting information.

Dr. Vinal recommends that every community with a population of 25,000 or more employ a full-time nature guide to direct its nature activities by planning a complete nature program for every day in the year. This guide should be



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responsible for the establishment of a museum, a botanic garden, a community greenhouse, flower shows, pet shows, garden exhibits and launching conservation programs.

The Nature Almanac aims to supply outlines of suggested programs for nature activities which a nature guide may carry out in any locality. It contains a list of seasonal opportunities that people may want to grasp, providing material for all types of people.

This Almanac may be secured from the Playground and Recreation Association of America, 315 Fourth Avenue, New York City, at 40 cents per copy. Special rates may be obtained for quantity orders of over twenty-five.

Welfare of Wild Fowl Discussed

Methods by which additional protection might be given to migratory wild fowl, particularly ducks and geese, was the subject of discussion when representative sportsmen and State game conservation officials met with officials of the United States Department of Agriculture on January 20 in Washington. Assistant Secretary of Agriculture, R. W. Dunlap, presided over the meeting. Several members of Congress appeared for their constituents, voicing the local angles of the case.

It was the opinion of many that the best protection afforded the birds could be given by shortening the open seasons, since the general feeling was against any change in the existing bag limit regulations. Suggestions had been made that the bag limits on wild ducks be reduced from 25 to 15, and from 8 to 6 for geese for the entire country. Other suggestions, included dividing the country into three districts with different regulations, District 1 to be the Atlantic Seaboard territory, District 2 to include the area drained by the Mississippi River and its tributaries, and District 3 to take in the more arid western region extending across the Rockies to the Pacific Coast.

Park Law Proposed in Indiana

The present session of the legislature in Indiana is voting on a measure whereby the commissioners of any county can buy or receive for gifts areas of land for park purposes. This privilege is accorded to counties having a population of not less than 110,000 and not more than 150,000 inhabitants.

Indiana already has one of the finest systems of state parks of any state. The Department of Conservation has six state parks located throughout the state comprising a total area of about 4,500 acres. 12,000 acres have recently been purchased for a state game preserve in Brown county. The legislature of 1925 voted \$1,000,000 with which to set aside an area of about 2,000 acres in the sand dunes along

the shore of Lake Michigan. The Conservation Department maintains a state forest in southern Indiana of about 4,500 acres where all kinds of forest experiments are conducted. There are about 200 acres of miscellaneous forestry plantings on the old fields in this preserve.

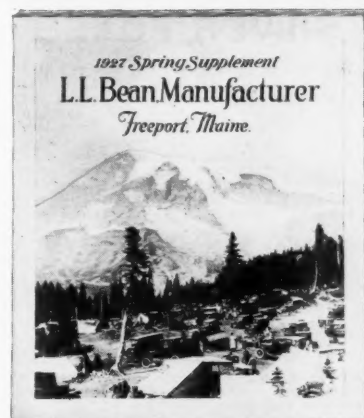
Foresters Meet In Albany

Following the meeting of the New York State Forestry Association, forty foresters attended a meeting of the New York State Section of the Society of American Foresters at the State Education Building on February 2.

Sharp discussion on the regulation of private cutting and the practice of forestry on state owned lands characterized the session. Hope was expressed that the State of New York might undertake, somewhere on its own lands, a demonstration of profitable practice of forestry such as it is now prohibited from doing on the State preserve by a constitutional provision.

Interesting discussion also followed papers by A. B. Recknagel on the progress of private forestry practice in the state, H. L. Churchill on the girdling of hardwoods to promote softwood growth, D. A. Crocker on the measurement of pulpwood, R. C. Hoyle on the consumption of forest products in the state and L. W. Rees on electrical resistance of wood to determine moisture content.

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Pulp Sales Planned for Alaska

The two largest timber sales ever offered by the Forest Service are now being advertised for competitive bids. These are sales of pulpwood in Alaska, each for five billion board feet. One sale is in the northern part of the Tongass National Forest not far from Juneau, and the other is in the southern part of the Forest near Ketchikan. The establishment of at least a 200 ton paper mill in Alaska is required as a condition of each sale, with opportunity to expand to 500 tons. The advertisements are in response to applications for timber and water power permits filed by a number of companies or groups of responsible individuals.

"The purposes of the department in offering these sales," said Secretary Jardine, "are first of all to aid in the economic development of the Territory by establishing large units of a new industry, using National Forest wood as its raw material; and secondly, to make that industry permanent by insuring a perpetual supply of timber. We invite and will protect the investment of capital necessary to establish large units of paper manufacture. At the same time, we must fully protect the public interest by getting fair compensation for the Government timber. The sales are offered with all these purposes in mind."

Southeastern Alaska has the timber, the water power and transportation facilities necessary for the development of a large paper manufacturing industry. Hemlock and spruce are the chief species. In the eastern United States, scarcity of available timber close to cheaply-developed water power has prevented the growth of paper-making in recent years and has led to the establishment of new mills in Canada and Newfoundland instead of within the United States. The



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Agents wanted
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Fire control and prevention is an important branch of sound forest management. Protect your forests with adequate fire detection and fighting equipment.

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INDICATE CLASS OF MEMBERSHIP DESIRED

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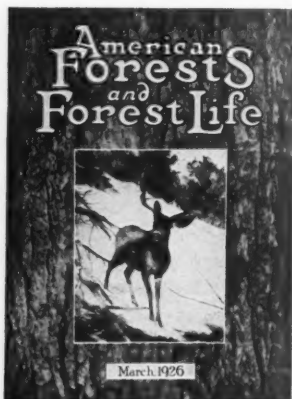
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Nominated by

March, 1927



American Forests and Forest
Life is sent monthly to all
except Annual Members

Mention AMERICAN FORESTS AND FOREST LIFE—It Helps

offerings of Alaska timber, he pointed out, will result in mills on American soil, using American timber, and supplying American paper users with a native instead of an imported product.

An investment of at least \$8,000,000 to \$10,000,000 in water power development, manufacturing plant and logging equipment will be necessary in connection with each project. To protect these very large investments, enough timber is offered in each sale to supply a 500-ton paper mill, running 300 days a year, for fifty years, and the contract allows that length of time for cutting the timber.

Louisiana Forestry Division Active

The Louisiana Division of Forestry has announced the purchase of approximately 3200 acres of land as an addition to the present State Forest located near Alexandria, Louisiana. This makes the total of the State Forest 5400 acres, and marks one more step in the state's plans to accumulate an area of 10,000 acres in this vicinity for its first state forest. Other purchases will be made in the near future and it is hoped practically complete this one state forest before the end of the fiscal year, which will be June 30th, 1927.

Miss Caroline C. Dormon, Chestnut, Louisiana, who was formerly connected with the Louisiana Division of Forestry,

and who has done considerable work in the development of technique of forestry education in the schools, has accepted a position with the Louisiana Division of Forestry. Under the present arrangement Miss Dormon will give a part of her time to Extension Forestry work for the Louisiana Division of Forestry and will spend the balance of her time writing articles for magazines.

According to the report of the Forester to the General Forestry Governing Board at its regular quarterly meeting held January 25th, the Louisiana Division of Forestry now has 3,000,000 of acres of forest lands in the state under intensive fire protection. The owners of nearly a million and a half acres of these protected lands are contributing 2c. per acre to the Division of Forestry as their share in the cooperative protection. These owners have also built fourteen fire towers to assist in its fire protection efforts. The system as now worked out includes fire towers connected by telephone lines with patrolmen located throughout the area under protection. Each patrolman has a definite district but is expected to answer the call of the fire towerman to go to any portion of the area under protection. Fire lines are built along all of the important roads to prevent careless setting of fire and additional fire lines are plowed through area of especial hazard to reduce the possible acreage that may be burned.

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FOXES

are recognized by the best trade for the highest degree of quality and type—which is the foundation of profits in the Silver Fox business.

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BOONVILLE, N. Y.



A \$1,000,000

Boy with \$1,000 worth of
Fox pelts, and the Murray
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Guide (Bulletin 1151) to Fox
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on his acre of open ground
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The most profitable livestock
Says U. S. Bulletin No. 1151

If you have a farm or suitable suburban place you can raise Foxes.

The same effort that you give to chickens or pigs will produce real profits with Foxes.

To enable you to study the business properly let us send you information free to enable you to consider Foxes in your 1927 plans—for profits and pleasure in making 1927 count.

Send a postal card and we will send you the above authoritative material about Foxes. Address:

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35 Pairs of Breeders
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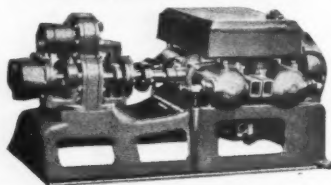
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This little pumper, at 150 pounds pressure, will put water to the top of a 345-foot hill through 1 1/2-inch rubber-lined hose. It is capable of pressure up to 200 pounds.

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PACIFIC MARINE SUPPLY CO.

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67 Lincoln Street

Augusta, Maine

Ohio Holds Sawmill Demonstration

Fifty-five farmers and sawmill men attended the second portable sawmill demonstration held in Columbiana county, Ohio. The demonstration was held in cooperation with the Extension Forester and the Ohio Hardwood Company, who are operating several mills in North-eastern Ohio.

Farm woodland owners are beginning to take greater interest in the modern portable sawmill and the way it can best assist in making the farm woods a more profitable crop. This is evidenced by the fact that of the fifty-five in attendance at the demonstration forty were farmers and fifteen sawmill men. For over three hours the crowd stood in a heavy snow fall and observed how the logs were properly turned on the carriage; how the boards were passed through the edger

and cut-off saw, and then sent to the lumber piles to be finally graded.

Great interest was taken in the larger number of culled and defective logs that were passed through the saw. Ordinarily such logs are usually passed by in the woods, or left on the ground to rot. Mr. Mosteller in charge of the sawing remarked "that we take the logs as they come, and apply the same method in obtaining grade lumber if possible out of a cull log as we do when sawing a No. 1 log. We, of course, are anxious to cut as many No. 1 logs in the woods as anyone else, but we are always able to obtain something even out of the poorest logs."

Sawing and grading lumber were the important features of the program. It is planned to hold at least three more demonstrations in this section of the state during February and March. The date and location of the meetings will be announced later.

The following were present and took a part in the program: Prof. W. G. Edwards, State College, Pennsylvania; L. J. Leffelman, Assistant Forester, Wooster; C. P. Mosteller, Cuyahoga, Falls; H. R. Detwiler, Columbiana, and F. W. Dean, Extension Forester, Wooster.

Report of Texas Legislative Committee on Forestry

The January issue of the *Texas Forest News* gives a summarized account of the conclusions reached by the Texas Legislative Committee on Forestry and the constructive program for reforestation which it presents.

While the State appreciates Federal aid, it believes that for the ultimate good of forest protection and reproduction, the control of such cooperative operations and the ownership of reforested lands should belong to the State and its citizens.

State Forests should be acquired of sufficient size for demonstration purposes as to forest renewal and management. The Legislature possesses the authority to appropriate money for this purpose. It is thought that public sentiment will be in favor of the State acquiring the bulk of the idle cut-over lands through bond issues to be retired by revenues derived from the sale of timber on the State Forests.

Recommendation is made for such legislation as will make it feasible for private citizens and private capital to undertake the reproduction of timber upon the denuded State lands. This will be made possible through the adoption of a constitutional amendment providing for a special system of taxation on lands which are being reforested.

A non-salaried State Board of Forestry should be created, according to the

1,670,000,000 CUBIC FEET NATIONAL FOREST TIMBER FOR SALE Embracing TWO PULPWOOD PROJECTS IN ALASKA

LOCATION AND AMOUNT—Each sale consists of all the merchantable timber marked or designated for cutting to an approximate total amount of \$35,000,000 cubic feet of western hemlock, Sitka spruce, western red cedar, Alaska cedar and other species of timber, approximately 75 per cent hemlock and 20 per cent spruce, within the Tongass National Forest, Alaska. The lands to comprise the sale area or areas will be selected by the timber awardee of each sale subject to the approval of the District Forester, after the bids have been opened and the timber awarded and before the contract is executed and cutting is begun.

The lands to comprise one sale will be selected from within the exterior boundaries of Pulpitment Allotment "A" located in the general vicinity of the town of Juneau in the northern portion of southeastern Alaska. There is no western red cedar in this allotment.

The lands to comprise the other sale will be selected from within the exterior boundaries of Pulpitment Allotments "E" and "F" located in the general vicinity of the town of Ketchikan in the southern portion of Alaska.

SALE CONDITIONS—The purchaser of each sale project must agree to establish a paper mill of not less than 200 tons daily capacity in the general region of the sale area before April 1, 1932. The time allowed for the cutting and removal of the timber from either sale extends to April 1, 1932. Timber is to be paid for in installments of \$10,000 to \$20,000 each as cutting proceeds. The unit of measurement for pulpwood is 100 cubic feet of solid wood.

STUMPAGE PRICES—The bid rates will apply to timber cut prior to April 1, 1932. The lowest rates that will be considered are: For material to be used for pulp or its products, \$0.60 per 100 cubic feet for Sitka spruce, western red cedar and Alaska cedar and \$0.30 per 100 cubic feet for western hemlock and other species; for material sold by the purchaser or to be manufactured for sale in other forms than pulp or its products, \$1.50 per M feet B. M. for sawlogs of spruce, western red cedar and Alaska cedar; \$1.00 per M feet B. M. for sawlogs of hemlock and other species; 1 1/2 cents per linear foot for piling and poles over 95 feet long; and 1 cent per linear foot for piling and poles 95 feet or less in length. Rates to be adjusted by the Forester on April 1, 1932, and at five-year intervals thereafter, under the conditions and limitations stated in the sample contract.

RELATION TO WATER POWERS—It is expected that bidders for either sale project will previously have submitted applications to the Federal Power Commission for permit covering water power development for manufacturing pulp and paper from the pulpwood hereby offered for sale. Each sale project is considered tributary to the water power sites in the same locality and the power permit will be granted to the timber awardee provided he meets the requirements of the Federal Power Commission.

CONSIDERATIONS AFFECTING TIMBER AWARD—In awarding each sale consideration will be given to the rates bid, financial ability to develop the paper manufacturing plant required, and any other factors which may assist in determining the bidder best qualified to make a success of the enterprise and whose project would be to the best public interest. The right to reject any and all bids is reserved.

DEPOSIT—With bid on each sale project, \$25,000, to be credited to stumpage payments, refunded or 20 per cent retained as liquidated damages, according to conditions of sale.

SHOWING OF FINANCIAL ABILITY—Each bid must be accompanied by a statement of the assets of the bidder available for this project, of the plan of financial organization proposed, and of any definite assurances of financial participation in the enterprise received from parties known to be able to make them good. Such a showing must include sufficient assets in hand to enable the bidder to meet the requirements of the water power permit applied for and to make the necessary investigation of the timber during the period of the conditional award. It must also indicate that the men identified with the organization and management of the enterprise have good business standing for responsibility, experience and capacity in the direction of business affairs.

FINAL DATE FOR BIDS—Sealed bids will be received by the Forester, Forest Service, Washington, D. C., for the sale in Pulpitment Allotment "A" up to 2 P. M., April 25, 1932, and for the sale in Pulpitment Allotments "E" and "F" up to 2 P. M., April 15, 1932. An extension of time of not to exceed three months for receiving bids for either sale will be granted at the request of responsible parties having legitimate interest to afford more time for field examinations. Before bids are submitted, full information concerning the character of the timber, conditions of sale, deposits and the submission of bids should be obtained from the District Forester, Juneau, Alaska, or the Forester, Washington, D. C.

PROCEDURE FOLLOWING AWARD—An award, good for not to exceed three years, will be made conditional upon (1) the receipt by the awardee of a water power permit from the Federal Power Commission covering an appurtenant power site, to be developed for a pulp and paper manufacturing plant of at least 200 tons daily capacity; (2) compliance with the terms of that permit and meeting the requirements of the Federal Power Commission for a water power license; (3) the selection, subject to the approval of the District Forester, of the specific sale area or areas; and (4) the submission of a final showing of financial ability to carry out the project. The contract for the timber will be executed and approved when and if these conditions are met.

report, having the authority to direct the work of the State Forester and other matters pertaining to registration of land and the determination of its value for taxation.

It is recommended that the existing State Forestry Department should be more adequately supported pending the passage of the necessary legislation. If the State appropriations for fire protection can be increased it will then be possible to secure larger sums for this purpose from the Federal Government.

Increased recognition is asked for the work already under way in assisting farmers in the treeless sections to plant farm woodlands and start tree production on treeless farms.

Steps should also be taken to control insect infestations which have done so much damage to merchantable pine timber in East Texas.

State Senator I. D. Fairchild of Lufkin is Chairman of the Committee. Other members are Senator E. E. Witt, of Waco; Hon. F. H. Burmeister, of Christine; Hon. Gary B. Sanford, of Garrison; W. Goodrich Jones, of Waco; R. W. Wier, of Houston; Hon. Leonard Tillotson, of Sealy; R. A. Gilliam, of Dallas; F. H. Farwell, of Orange; Mrs. Ben F. Boydston, of Greenville, and Hon. W. L. Dean of Huntsville.

Eastern National Forests Grow

The report of the National Forest Reservation Commission to Congress now available for distribution shows that in the 16 years' duration of this work a total of 2,772,965 acres have been authorized for purchase by this Commission for Eastern National Forests distributed as follows:

State	Acres
Alabama	92,945
Arkansas	98,668
Georgia	201,300
Maine	32,892
Michigan	50,080
New Hampshire	431,846
North Carolina	378,366
Pennsylvania	243,986
South Carolina	41,738
Tennessee	373,528
Virginia	585,796
West Virginia	241,820
Total	2,772,965

During the past year the work under an appropriation of one million dollars has progressed without any material change in policy. A matter of significance is the extension of the purchase work to the Lake States where 50,000 acres are being acquired. The plans of the Commission call for the establishment of a series of National Forests not only within the Lake States but within the Coastal Plain region of the Atlantic

States. These sites are not only being selected for timber production but are being located within the most important types of forests for demonstrational purposes. The report stresses the fact that there is urgent need for aggressive leadership in forest management in these regions, particularly in the Southern Pine belt.

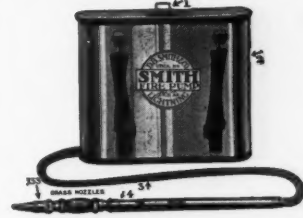
The report calls attention to the progress in administration on the purchased lands. The area annually burned over diminishes from year to year as the protective system develops.

During the fiscal year 1926 these Forests yielded a gross revenue of \$123,696, this amount being less, however, than the returns for the two preceding years. Only a limited amount of timber of high grade is being sold at present. This accounts for the low receipts.

The purchase program in the Lake States looks forward to the acquisition of about 2½ million acres, and the objective in the Southern Pine region is for an equal area. This is in addition to the completion of the established units in the White Mountains, Appalachians, and Ozarks. It is the view of the Commission that the appropriation of one million dollars is inadequate to purchase National Forest lands on a scale commensurate with the forest needs of the Eastern States, and the Commission urges an appropriation of three million dollars.

SMITH INDIAN FIRE PUMP

A well built fire pump for long hard service.



Easily Carried and Operated by Anyone

The Indian can not be excelled for fighting forest fire, brush fires, grass fires, in fact for fighting fires anywhere.

The Knapsack tank, holding about 5 gallons, is conveniently carried on the back, similar to a pack basket. It has a detachable strainer, preventing any sediments or rubbish entering when dipped into stream or lake for filling. The pump is entirely of heavy brass and has no leather packings or parts to play out or wear out, and is always in working order ready for any fire emergency. One brass cylinder works back and forth inside the other, and slow easy pumping throws a powerful 50 foot stream to any point desired.

The Indian is easily carried over logs and hilly places, and quickly extinguishes fires in trees, crotches, stumps, etc., and is highly recommended. Used on private estates, private and public parks, private and public lumber preserves, state and federal preserves. No forest either small or large should be without this fire pump.

Write for descriptive circular and prices on the Indian and other styles.

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Galvanized Steel Towers FOR THE Forest Service

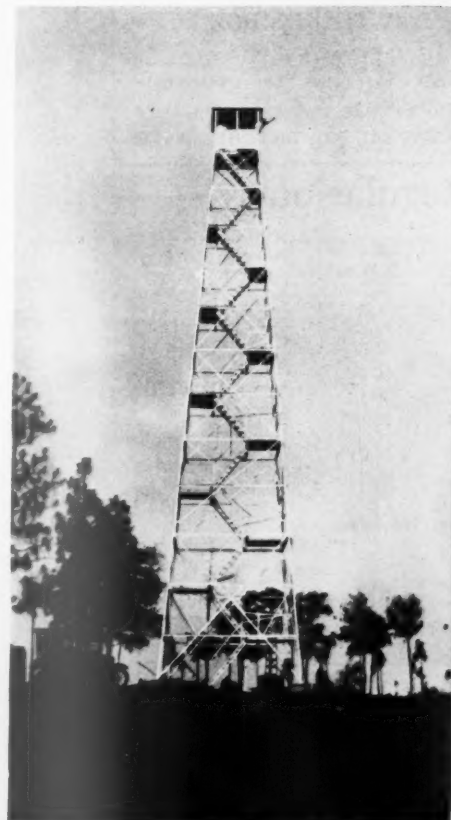
Our long experience in designing and building a great variety of steel towers has enabled us to produce this superior line of towers for Observation and Fire Protection purposes.

The house at the top of the tower is 7-ft. square. It provides comfortable quarters for the observer.

The illustration shows an 80-ft. tower of the LS-40 type. It was erected at Kirbyville, Texas, for the State Forestry Department. This tower has a regular stairway, with a railing on both sides, from the ground to the cabin. It is safe and easy for anyone to climb. The prices are moderate.

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No guess work when you buy an outfit here—It will look right, fit right, wear right and—Be **RIGHT—**

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Write for **NEW Illustrated Catalog** with Samples and Prices attached.

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SMITH-GRAY

729 Broadway

New York

Scouts Plant Roosevelt Trees

TWO trees grown from nuts of the huge black walnut which overshadows the grave of Theodore Roosevelt, at Oyster Bay, New York, were planted at the Roosevelt School, Tacoma, Washington, preceding the recent memorial anniversary of the great American.

William W. Seymour, former Mayor of Tacoma, presented the trees to the Scouts, who accepted them with appropriate ceremonies at the school.

ex-mayor, "in grateful memory of one who holds a sacred place in the hearts of all scouts."

The idea of having scouts from all parts of the country plant the memorial trees occurred to Mr. Seymour when he attended one of the famous annual scout pilgrimages to the grave of Roosevelt.

In true cowboy attire the Westerner joined in the ceremony. With chaps and spurs, buckskin jacket and tie of rattl-



Photograph by Boland

Tree planting ceremonies by the Tacoma Washington Council, Boy Scouts of America, when two black walnut trees were planted at the Roosevelt School in Tacoma, in honor of the great American.

It is Mr. Seymour's ambition to see Roosevelt trees at every Roosevelt School in the United States. Daniel Carter Beard, National Scout Commissioner, is helping the cause, by sending to the Tacoma sponsor a large parcel of walnuts just gathered at the grave. These will be planted, and grown for distribution next October.

Mr. Seymour has also asked Chief Scout Executive James E. West to request each of the 608 scout councils to secure walnuts from the mother tree, and to plant the young trees which grow from them, on school-grounds.

"We believe that the Boy Scouts of the Oyster Bay district would be glad to participate in this endeavor," stated the

snake skin the former mayor made a picturesque figure among the khaki uniformed scouts. "Butternut Bill," as he is known, struck by the beauty of the great tree near the grave, picked up several of its fallen walnuts, and the scouts helped gather more for their guest.

Upon his return home, Mr. Seymour placed several of the nuts in ground in the cellar of his home. They remained there all winter. It was May before the heavy shells of the walnuts began to open, the force of the tiny germs exerting sufficient pressure to break the hard, black surfaces. When they had grown past the germinating stage, they were placed out of doors and are now about 15 inches high.

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Field work in the magnificent Oregon forests, easily accessible from the school. The largest logging operations and lumber manufacturing plants near at hand.

Summer work readily obtainable in the Forest Service, in logging camps, and in the mills.

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Members may select from them with the full assurance that they are choosing from the best.

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**Colorado School of Forestry
A Department of Colorado College**

Undergraduate and graduate courses in Technical Forestry. Forestry teaching in spring and fall at Manitou Forest (a 7,000-acre Forest belonging to the School), and the winter term at Colorado Springs.

**Gordon Parker, Director
Colorado Springs, Colorado**

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The Forestry Department offers a four-years' undergraduate curriculum, leading to the degree of Bachelor of Science in Forestry.

Opportunities for full technical training, and for specializing in forestry problems of the northeastern States and Canada.

Eight-weeks' camp-course required of all Seniors in Forestry, in practical logging operations in northern Maine, under faculty supervision.

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Four and Five Year Courses, leading to the degrees of Bachelor of Science in Forestry and Master of Science in Forestry respectively.

Opportunity is given to specialize in General Forestry, Logging, Engineering, and Range Management.

Large logging and milling operations, important wood-working industries, also extensive federal, state, and private forests near at hand. Excellent opportunity for summer employment.

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A FOUR-YEAR course in Pulp and Paper Manufacture and a short course each spring in Dry-kiln Engineering and Lumber Grading are regularly given. The State Forest Experiment Station of ninety acres at Syracuse, the Charles Lathrop Pack Demonstration Forest of 1,000 acres at Cranberry Lake, three other experiment stations, the Roosevelt Wild Life Forest Experiment Station, a modern pulp mill, a well-equipped sawmill, a complete dry-kiln plant, the biological laboratories, and an excellent reference library afford unusual opportunities for research and instruction. In addition to the regular four-year undergraduate courses, special courses are offered that lead to the degrees of Master of Forestry, Master of City Forestry, Master of Science, Doctor of Philosophy, and Doctor of Economics. Students may elect work in nine different fields.

FRANKLIN MOON, Dean



June, 1925, before treatment. Tree in Central Park starving through neglect under semi-artificial conditions. Note thin foliage and dying top



June, 1926—same tree one year after treatment. Restored to new health and vigor through Davey methods of scientific feeding and pruning

Saving the starving trees of Central Park, New York

TO EXPLAIN away the obvious results of neglect and inefficiency, various fanciful and fallacious theories were advanced as to the reasons why the trees of Central Park are dying. In 1925 the Davey Company challenged these unwarranted claims, and made the positive assertion that the trees of Central Park are dying from neglect and starvation. To prove the truth of this assertion, the Davey Company offered to treat, at its own expense, 100 dying trees as a demonstration.

A careful survey by Davey Experts indicated that about 25% of the older trees of Central Park are too far gone to save, and another 25%, approximately, are border-line cases in advanced stages of decline, but with some reasonable chance of saving them by proper treatment. The other 50% were in varying conditions from fairly good to relatively poor.

The 100 trees selected for demonstration were taken from the second group of border-line cases, and the Davey Company staked its reputation on its ability to save a substantial portion of these dying trees. The treatment given was the result of John Davey's life experience and the quarter of a century experience of the whole Davey organization.

This treatment was a combination of practical common sense and scientific knowledge and experience. For exactly the same reason that a good farmer cultivates his fields and fertilizes his soil, the ground under these trees was thoroughly cultivated—adequate and appropriate fertilizers were used—the ground was prepared to receive both water and air, so vital to plant life. One of

the important elements in this program was the use of Davey Tree Food to stimulate new growth quickly.

In addition to this, the trees were given expert scientific pruning to eliminate the dead and weak parts, and to establish a proper balance between a dying top and an impoverished root system. All the trees of Central Park are living under semi-artificial conditions, aggravated by neglect.

One year later, in June, 1926, photographs were again taken of the same 100 trees, and a thorough examination disclosed the fact that 90% of them showed definite improvement, a large proportion showing really marvelous improvement. The other 10% were holding their own.

All of this proves beyond the possibility of doubt or fallacious argument that most of the trees of Central Park can be saved, if the civic pride of New York forces a prompt and complete abandonment of the past policy of neglect.

All trees growing under lawn conditions are living under more or less artificial handicaps. Many of them are actually starving, slowly or rapidly. They need help. Are any of your trees starving? Look for danger signs in the slowly dying tops. The local Davey representative will be glad to examine your trees and report their condition to you without cost or obligation.



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